#6

SEQUENCE LISTING

<110> GORING, Daphne R. et al.

<120> PROLINE-RICH EXTENSIN-LIKE RECEPTOR KINASES

<130> P 25,762-A USA

<140> US 10/086,464
<141> 2002-02-28

<150> US 10/069,304
<151> 2002-02-19

<150> PCT/CA00/00966
<151> 2000-08-18

<150> US 60/149,466
<151> 1999-08-19

<150> US 60/159,122
<151> 1999-10-13

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<170> PatentIn Ver. 2.1

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tca aac tcc aca acc acc act cct cct cca gct tcc gct cct cct ccc   96
Ser Asn Ser Thr Thr Thr Thr Pro Pro Pro Ala Ser Ala Pro Pro Pro
            20                  25                  30

acc aca cct tct tct cct ccg ccg cca tcc act att ccg aca tct cct  144
Thr Thr Pro Ser Ser Pro Pro Pro Pro Ser Thr Ile Pro Thr Ser Pro
        35                  40                  45

cct cct tct tct cgc tct aca cct tct gct cct cct cca tct cca cca  192
Pro Pro Ser Ser Arg Ser Thr Pro Ser Ala Pro Pro Pro Ser Pro Pro
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act cca tct acg ccg gga tct cca cct cct ctt cct cag ccg tct cca   240
Thr Pro Ser Thr Pro Gly Ser Pro Pro Pro Leu Pro Gln Pro Ser Pro
 65                  70                  75                  80

ccc gct cca act acg ccc gga tct cca ccc gca cct gtt act cct cct   288
Pro Ala Pro Thr Thr Pro Gly Ser Pro Pro Ala Pro Val Thr Pro Pro
                 85                  90                  95

act cga aac cct cca cct tca gtc cca gga cca ccg tcc aat cct tca   336
Thr Arg Asn Pro Pro Pro Ser Val Pro Gly Pro Pro Ser Asn Pro Ser
            100                 105                 110

cgc gaa gga gga tct cct cga cct cca tct tct ccc tcg ccg ccg tct   384
Arg Glu Gly Gly Ser Pro Arg Pro Pro Ser Ser Pro Ser Pro Pro Ser
        115                 120                 125

cct tct tcc gac ggt tta tca aca gga gtg gtg gtg gga atc gcc atc   432
Pro Ser Ser Asp Gly Leu Ser Thr Gly Val Val Val Gly Ile Ala Ile
    130                 135                 140

gga gga gtc gct ctg ctt gtg ata gtg act ctg att tgt ctc ctc tgt   480
Gly Gly Val Ala Leu Leu Val Ile Val Thr Leu Ile Cys Leu Leu Cys
145                 150                 155                 160

aag aag aaa cga cgg aga gac gaa gaa gat gct tac tat gtt cct ccg   528
Lys Lys Lys Arg Arg Arg Asp Glu Glu Asp Ala Tyr Tyr Val Pro Pro
                165                 170                 175

cca cct cct cct ggt ccc aaa gcc gga gga cct tac ggt gga cag cag   576
Pro Pro Pro Pro Gly Pro Lys Ala Gly Gly Pro Tyr Gly Gly Gln Gln
            180                 185                 190

caa caa tgg cgg caa caa aac gca aca cca ccg tca gat cat gtc gtg   624
Gln Gln Trp Arg Gln Gln Asn Ala Thr Pro Pro Ser Asp His Val Val
        195                 200                 205

acg tca cta cca cca cca cct aag gct cca tct cca cca cgg caa cct   672
Thr Ser Leu Pro Pro Pro Pro Lys Ala Pro Ser Pro Pro Arg Gln Pro
    210                 215                 220

cct cca cct cca cca ccg cct ttc atg agc agc agc ggc ggc tcc gac   720
Pro Pro Pro Pro Pro Pro Pro Phe Met Ser Ser Ser Gly Gly Ser Asp
225                 230                 235                 240

tac tcg gac cgt cca gtt ctt cct cca ccg tct cca ggg ctt gtg tta   768
Tyr Ser Asp Arg Pro Val Leu Pro Pro Pro Ser Pro Gly Leu Val Leu
                245                 250                 255

ggc ttc tcc aaa agc act ttc aca tac gag gag cta gct aga gcc acc   816
Gly Phe Ser Lys Ser Thr Phe Thr Tyr Glu Glu Leu Ala Arg Ala Thr
            260                 265                 270

aat ggt ttc tcc gag gcg aac ttg tta gga caa ggc ggg ttc ggt tac   864
Asn Gly Phe Ser Glu Ala Asn Leu Leu Gly Gln Gly Gly Phe Gly Tyr
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        275                 280                 285

gtg cac aaa ggt gtg ttg cct agt ggg aaa gaa gtt gct gtg aag cag   912
Val His Lys Gly Val Leu Pro Ser Gly Lys Glu Val Ala Val Lys Gln
    290                 295                 300

ttg aaa gtt ggg agt ggt cag gga gag agg gag ttt cag gca gag gtt   960
Leu Lys Val Gly Ser Gly Gln Gly Glu Arg Glu Phe Gln Ala Glu Val
305                 310                 315                 320

gag atc atc agc aga gtt cac cac agg cat ctg gtg tct ctt gtt ggt  1008
Glu Ile Ile Ser Arg Val His His Arg His Leu Val Ser Leu Val Gly
                325                 330                 335

tat tgc atc gcc ggt gcc aaa aga ttg ctt gtc tat gag ttt gtt cct  1056
Tyr Cys Ile Ala Gly Ala Lys Arg Leu Leu Val Tyr Glu Phe Val Pro
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aac aac aat ctc gag ctt cac ctc cat ggc gag gga cgg cct aca atg  1104
Asn Asn Asn Leu Glu Leu His Leu His Gly Glu Gly Arg Pro Thr Met
        355                 360                 365

gaa tgg agc acc aga ttg aag att gct ctt gga tct gct aaa gga ctt  1152
Glu Trp Ser Thr Arg Leu Lys Ile Ala Leu Gly Ser Ala Lys Gly Leu
    370                 375                 380

tct tat ctt cat gaa gat tgc aat cct aaa atc att cac cgt gat atc  1200
Ser Tyr Leu His Glu Asp Cys Asn Pro Lys Ile Ile His Arg Asp Ile
385                 390                 395                 400

aag gct tca aac ata ttg ata gat ttc aag ttt gaa gct aag gtt gct  1248
Lys Ala Ser Asn Ile Leu Ile Asp Phe Lys Phe Glu Ala Lys Val Ala
                405                 410                 415

gat ttt ggt ctt gct aag att gct tct gat aca aac acg cat gta tca  1296
Asp Phe Gly Leu Ala Lys Ile Ala Ser Asp Thr Asn Thr His Val Ser
            420                 425                 430

aca cgt gtg atg gga acc ttt ggg tac ttg gct ccg gaa tac gct gca  1344
Thr Arg Val Met Gly Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ala
        435                 440                 445

agc gga aag ctc acg gag aag tct gac gtt ttc tca ttt ggc gtt gtg  1392
Ser Gly Lys Leu Thr Glu Lys Ser Asp Val Phe Ser Phe Gly Val Val
    450                 455                 460

ctt ttg gag ctc att act gga cgt cga ccc gtt gat gcc aac aat gtc  1440
Leu Leu Glu Leu Ile Thr Gly Arg Arg Pro Val Asp Ala Asn Asn Val
465                 470                 475                 480

tat gta gat gac agc tta gtt gac tgg gca cga cca ttg ctt aac cga  1488
Tyr Val Asp Asp Ser Leu Val Asp Trp Ala Arg Pro Leu Leu Asn Arg
                485                 490                 495
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gca tct gag caa gga gac ttt gag ggt tta gct gat gca aag atg aat   1536
Ala Ser Glu Gln Gly Asp Phe Glu Gly Leu Ala Asp Ala Lys Met Asn
            500                 505                 510

aat ggg tat gac aga gag gag atg gct cgc atg gtt gct tgt gct gcg   1584
Asn Gly Tyr Asp Arg Glu Glu Met Ala Arg Met Val Ala Cys Ala Ala
        515                 520                 525

gct tgt gtt cgc cat tca gct cgc cgc aga cct cgc atg agc cag att   1632
Ala Cys Val Arg His Ser Ala Arg Arg Arg Pro Arg Met Ser Gln Ile
    530                 535                 540

gtg cgt gcg tta gaa gga aat gta tca ctg tca gat ctt aac gaa ggg   1680
Val Arg Ala Leu Glu Gly Asn Val Ser Leu Ser Asp Leu Asn Glu Gly
545                 550                 555                 560

atg aga cca ggt caa agc aat gta tac agc tca tac gga gga agc acc   1728
Met Arg Pro Gly Gln Ser Asn Val Tyr Ser Ser Tyr Gly Gly Ser Thr
                565                 570                 575

gat tat gac tcg agc cag tac aat gaa gac atg aag aag ttt agg aaa   1776
Asp Tyr Asp Ser Ser Gln Tyr Asn Glu Asp Met Lys Lys Phe Arg Lys
            580                 585                 590
atg gca ctt gga act caa gag tac aac gcc acg ggt gag tac agt aat   1824
Met Ala Leu Gly Thr Gln Glu Tyr Asn Ala Thr Gly Glu Tyr Ser Asn
        595                 600                 605

ccg acc agt gac tat gga ctg tac ccg tct ggt tca agc agc gag ggc   1872
Pro Thr Ser Asp Tyr Gly Leu Tyr Pro Ser Gly Ser Ser Ser Glu Gly
    610                 615                 620

caa acc aca cgc gaa atg gag atg ggg aag att aag aga acc ggt cag   1920
Gln Thr Thr Arg Glu Met Glu Met Gly Lys Ile Lys Arg Thr Gly Gln
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            20                  25                  30
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        35                  40                  45
Pro Pro Ser Ser Arg Ser Thr Pro Ser Ala Pro Pro Pro Ser Pro Pro
    50                  55                  60
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Thr Pro Ser Thr Pro Gly Ser Pro Pro Pro Leu Pro Gln Pro Ser Pro
65 70 75 80
Pro Ala Pro Thr Thr Pro Gly Ser Pro Pro Ala Pro Val Thr Pro Pro
85 90 95
Thr Arg Asn Pro Pro Pro Ser Val Pro Gly Pro Pro Ser Asn Pro Ser
100 105 110
Arg Glu Gly Gly Ser Pro Arg Pro Pro Ser Ser Pro Ser Pro Pro Ser
115 120 125
Pro Ser Ser Asp Gly Leu Ser Thr Gly Val Val Val Gly Ile Ala Ile
130 135 140
Gly Gly Val Ala Leu Leu Val Ile Val Thr Leu Ile Cys Leu Leu Cys
145 150 155 160
Lys Lys Lys Arg Arg Arg Asp Glu Glu Asp Ala Tyr Tyr Val Pro Pro
165 170 175
Pro Pro Pro Pro Gly Pro Lys Ala Gly Gly Pro Tyr Gly Gly Gln Gln
180 185 190
Gln Gln Trp Arg Gln Gln Asn Ala Thr Pro Pro Ser Asp His Val Val
195 200 205
Thr Ser Leu Pro Pro Pro Pro Lys Ala Pro Ser Pro Pro Arg Gln Pro
210 215 220
Pro Pro Pro Pro Pro Pro Pro Phe Met Ser Ser Ser Gly Gly Ser Asp
225 230 235 240
Tyr Ser Asp Arg Pro Val Leu Pro Pro Pro Ser Pro Gly Leu Val Leu
245 250 255
Gly Phe Ser Lys Ser Thr Phe Thr Tyr Glu Glu Leu Ala Arg Ala Thr
260 265 270
Asn Gly Phe Ser Glu Ala Asn Leu Leu Gly Gln Gly Gly Phe Gly Tyr
275 280 285
Val His Lys Gly Val Leu Pro Ser Gly Lys Glu Val Ala Val Lys Gln
290 295 300
Leu Lys Val Gly Ser Gly Gln Gly Glu Arg Glu Phe Gln Ala Glu Val
305 310 315 320
Glu Ile Ile Ser Arg Val His His Arg His Leu Val Ser Leu Val Gly
325 330 335
Tyr Cys Ile Ala Gly Ala Lys Arg Leu Leu Val Tyr Glu Phe Val Pro
340 345 350
Asn Asn Asn Leu Glu Leu His Leu His Gly Glu Gly Arg Pro Thr Met
355 360 365
Glu Trp Ser Thr Arg Leu Lys Ile Ala Leu Gly Ser Ala Lys Gly Leu
370 375 380
Ser Tyr Leu His Glu Asp Cys Asn Pro Lys Ile Ile His Arg Asp Ile
385 390 395 400
Lys Ala Ser Asn Ile Leu Ile Asp Phe Lys Phe Glu Ala Lys Val Ala
405 410 415
Asp Phe Gly Leu Ala Lys Ile Ala Ser Asp Thr Asn Thr His Val Ser
420 425 430
Thr Arg Val Met Gly Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ala
435 440 445
Ser Gly Lys Leu Thr Glu Lys Ser Asp Val Phe Ser Phe Gly Val Val
450 455 460
Leu Leu Glu Leu Ile Thr Gly Arg Arg Pro Val Asp Ala Asn Asn Val
465 470 475 480
Tyr Val Asp Asp Ser Leu Val Asp Trp Ala Arg Pro Leu Leu Asn Arg
485 490 495

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Ala Ser Glu Gln Gly Asp Phe Glu Gly Leu Ala Asp Ala Lys Met Asn
            500                 505                 510
Asn Gly Tyr Asp Arg Glu Glu Met Ala Arg Met Val Ala Cys Ala Ala
        515                 520                 525
Ala Cys Val Arg His Ser Ala Arg Arg Arg Pro Arg Met Ser Gln Ile
    530                 535                 540
Val Arg Ala Leu Glu Gly Asn Val Ser Leu Ser Asp Leu Asn Glu Gly
545                 550                 555                 560
Met Arg Pro Gly Gln Ser Asn Val Tyr Ser Ser Tyr Gly Gly Ser Thr
                565                 570                 575
Asp Tyr Asp Ser Ser Gln Tyr Asn Glu Asp Met Lys Lys Phe Arg Lys
            580                 585                 590
Met Ala Leu Gly Thr Gln Glu Tyr Asn Ala Thr Gly Glu Tyr Ser Asn
        595                 600                 605
Pro Thr Ser Asp Tyr Gly Leu Tyr Pro Ser Gly Ser Ser Ser Glu Gly
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Gly Tyr Ser Gly Pro Ser Leu
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                                        Met Ser Ser Ala Pro Ser
                                        1               5

ccg ggg act ggt tcg cct cca tct cca cca tca aac tcc aca acc acc        162
Pro Gly Thr Gly Ser Pro Pro Ser Pro Pro Ser Asn Ser Thr Thr Thr
            10                  15                  20

act cct cct cca gct tcc gct cct cct ccc acc aca cct tct tct cct        210
Thr Pro Pro Pro Ala Ser Ala Pro Pro Pro Thr Thr Pro Ser Ser Pro
        25                  30                  35

ccg ccg cca tcc act att ccg aca tct cct cct cct tct tct cgc tct        258
Pro Pro Pro Ser Thr Ile Pro Thr Ser Pro Pro Pro Ser Ser Arg Ser
    40                  45                  50
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aca cct tct gct cct cct cca tct cca cca act cca tct acg ccg gga      306
Thr Pro Ser Ala Pro Pro Pro Ser Pro Pro Thr Pro Ser Thr Pro Gly
55                  60                  65                  70

tct cca cct cct ctt cct cag ccg tct cca ccc gct cca act acg ccc      354
Ser Pro Pro Pro Leu Pro Gln Pro Ser Pro Pro Ala Pro Thr Thr Pro
                75                  80                  85

gga tct cca ccc gca cct gtt act cct cct act cga aac cct cca cct      402
Gly Ser Pro Pro Ala Pro Val Thr Pro Pro Thr Arg Asn Pro Pro Pro
            90                  95                  100

tca gtc cca gga cca ccg tcc aat cct tca cgc gaa gga gga tct cct      450
Ser Val Pro Gly Pro Pro Ser Asn Pro Ser Arg Glu Gly Gly Ser Pro
        105                 110                 115

cga cct cca tct tct ccc tcg ccg ccg tct cct tct tcc gac ggt tta      498
Arg Pro Pro Ser Ser Pro Ser Pro Pro Ser Pro Ser Ser Asp Gly Leu
    120                 125                 130

tca aca gga gtg gtg gtg gga atc gcc atc gga gga gtc gct ctg ctt      546
Ser Thr Gly Val Val Val Gly Ile Ala Ile Gly Gly Val Ala Leu Leu
135                 140                 145                 150

gtg ata gtg act ctg att tgt ctc ctc tgt aag aag aaa cga cgg aga      594
Val Ile Val Thr Leu Ile Cys Leu Leu Cys Lys Lys Lys Arg Arg Arg
                155                 160                 165

gac gaa gaa gat gct tac tat gtt cct ccg cca cct cct cct ggt ccc      642
Asp Glu Glu Asp Ala Tyr Tyr Val Pro Pro Pro Pro Pro Pro Gly Pro
            170                 175                 180

aaa gcc gga gga cct tac ggt gga cag cag caa caa tgg cgg caa caa      690
Lys Ala Gly Gly Pro Tyr Gly Gly Gln Gln Gln Gln Trp Arg Gln Gln
        185                 190                 195

aac gca aca cca ccg tca gat cat gtc gtg acg tca cta cca cca cca      738
Asn Ala Thr Pro Pro Ser Asp His Val Val Thr Ser Leu Pro Pro Pro
    200                 205                 210

cct aag gct cca tct cca cca cgg caa cct cct cca cct cca cca ccg      786
Pro Lys Ala Pro Ser Pro Pro Arg Gln Pro Pro Pro Pro Pro Pro Pro
215                 220                 225                 230

cct ttc atg agc agc agc ggc ggc tcc gac tac tcg gac cgt cca gtt      834
Pro Phe Met Ser Ser Ser Gly Gly Ser Asp Tyr Ser Asp Arg Pro Val
                235                 240                 245

ctt cct cca ccg tct cca ggg ctt gtg tta ggc ttc tcc aaa agc act      882
Leu Pro Pro Pro Ser Pro Gly Leu Val Leu Gly Phe Ser Lys Ser Thr
            250                 255                 260

ttc aca tac gag gag cta gct aga gcc acc aat ggt ttc tcc gag gcg      930
Phe Thr Tyr Glu Glu Leu Ala Arg Ala Thr Asn Gly Phe Ser Glu Ala
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          265                 270                 275

aac ttg tta gga caa ggc ggg ttc ggt tac gtg cac aaa ggt gtg ttg      978
Asn Leu Leu Gly Gln Gly Gly Phe Gly Tyr Val His Lys Gly Val Leu
    280                 285                 290

cct agt ggg aaa gaa gtt gct gtg aag cag ttg aaa gtt ggg agt ggt     1026
Pro Ser Gly Lys Glu Val Ala Val Lys Gln Leu Lys Val Gly Ser Gly
295                 300                 305                 310

cag gga gag agg gag ttt cag gca gag gtt gag atc atc agc aga gtt     1074
Gln Gly Glu Arg Glu Phe Gln Ala Glu Val Glu Ile Ile Ser Arg Val
                315                 320                 325

cac cac agg cat ctg gtg tct ctt gtt ggt tat tgc atc gcc ggt gcc     1122
His His Arg His Leu Val Ser Leu Val Gly Tyr Cys Ile Ala Gly Ala
            330                 335                 340

aaa aga ttg ctt gtc tat gag ttt gtt cct aac aac aat ctc gag ctt     1170
Lys Arg Leu Leu Val Tyr Glu Phe Val Pro Asn Asn Asn Leu Glu Leu
        345                 350                 355

cac ctc cat ggc gag gga cgg cct aca atg gaa tgg agc acc aga ttg     1218
His Leu His Gly Glu Gly Arg Pro Thr Met Glu Trp Ser Thr Arg Leu
    360                 365                 370

aag att gct ctt gga tct gct aaa gga ctt tct tat ctt cat gaa gat     1266
Lys Ile Ala Leu Gly Ser Ala Lys Gly Leu Ser Tyr Leu His Glu Asp
375                 380                 385                 390

tgc aat cct aaa atc att cac cgt gat atc aag gct tca aac ata ttg     1314
Cys Asn Pro Lys Ile Ile His Arg Asp Ile Lys Ala Ser Asn Ile Leu
                395                 400                 405

ata gat ttc aag ttt gaa gct aag gtt gct gat ttt ggt ctt gct aag     1362
Ile Asp Phe Lys Phe Glu Ala Lys Val Ala Asp Phe Gly Leu Ala Lys
            410                 415                 420

att gct tct gat aca aac acg cat gta tca aca cgt gtg atg gga acc     1410
Ile Ala Ser Asp Thr Asn Thr His Val Ser Thr Arg Val Met Gly Thr
        425                 430                 435

ttt ggg tac ttg gct ccg gaa tac gct gca agc gga aag ctc acg gag     1458
Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ala Ser Gly Lys Leu Thr Glu
    440                 445                 450

aag tct gac gtt ttc tca ttt ggc gtt gtg ctt ttg gag ctc att act     1506
Lys Ser Asp Val Phe Ser Phe Gly Val Val Leu Leu Glu Leu Ile Thr
455                 460                 465                 470

gga cgt cga ccc gtt gat gcc aac aat gtc tat gta gat gac agc tta     1554
Gly Arg Arg Pro Val Asp Ala Asn Asn Val Tyr Val Asp Asp Ser Leu
                475                 480                 485
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gtt gac tgg gca cga cca ttg ctt aac cga gca tct gag caa gga gac     1602
Val Asp Trp Ala Arg Pro Leu Leu Asn Arg Ala Ser Glu Gln Gly Asp
            490                 495                 500

ttt gag ggt tta gct gat gca aag atg aat aat ggg tat gac aga gag     1650
Phe Glu Gly Leu Ala Asp Ala Lys Met Asn Asn Gly Tyr Asp Arg Glu
        505                 510                 515

gag atg gct cgc atg gtt gct tgt gct gcg gct tgt gtt cgc cat tca     1698
Glu Met Ala Arg Met Val Ala Cys Ala Ala Ala Cys Val Arg His Ser
    520                 525                 530

gct cgc cgc aga cct cgc atg agc cag att gtg cgt gcg tta gaa gga     1746
Ala Arg Arg Arg Pro Arg Met Ser Gln Ile Val Arg Ala Leu Glu Gly
535                 540                 545                 550

aat gta tca ctg tca gat ctt aac gaa ggg atg aga cca ggt caa agc     1794
Asn Val Ser Leu Ser Asp Leu Asn Glu Gly Met Arg Pro Gly Gln Ser
                555                 560                 565

aat gta tac agc tca tac gga gga agc acc gat tat gac tcg agc cag     1842
Asn Val Tyr Ser Ser Tyr Gly Gly Ser Thr Asp Tyr Asp Ser Ser Gln
            570                 575                 580

tac aat gaa gac atg aag aag ttt agg aaa atg gca ctt gga act caa     1890
Tyr Asn Glu Asp Met Lys Lys Phe Arg Lys Met Ala Leu Gly Thr Gln
        585                 590                 595

gag tac aac gcc acg ggt gag tac agt aat ccg acc agt gac tat gga     1938
Glu Tyr Asn Ala Thr Gly Glu Tyr Ser Asn Pro Thr Ser Asp Tyr Gly
    600                 605                 610

ctg tac ccg tct ggt tca agc agc gag ggc caa acc aca cgc gaa atg     1986
Leu Tyr Pro Ser Gly Ser Ser Ser Glu Gly Gln Thr Thr Arg Glu Met
615                 620                 625                 630

gag atg ggg aag att aag aga acc ggt cag ggt tat agt gga cct tct     2034
Glu Met Gly Lys Ile Lys Arg Thr Gly Gln Gly Tyr Ser Gly Pro Ser
                635                 640                 645

ctt t aaaccagatg ggagagaaat tgaagggtgt tttttcatta ttttttttaaa       2088
Leu

actgtaaaga tatgagaaaa ttgccttact ctaattaaaa ccactacgat ataaggttat   2148

aatacgtttt gaattggttt ttaaaaaaaa aaaaaaaaaa a                       2189
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            20                  25                  30
Thr Thr Pro Ser Ser Pro Pro Pro Pro Ser Thr Ile Pro Thr Ser Pro
        35                  40                  45
Pro Pro Ser Ser Arg Ser Thr Pro Ser Ala Pro Pro Pro Ser Pro Pro
    50                  55                  60
Thr Pro Ser Thr Pro Gly Ser Pro Pro Pro Leu Pro Gln Pro Ser Pro
65                  70                  75                  80
Pro Ala Pro Thr Thr Pro Gly Ser Pro Pro Ala Pro Val Thr Pro Pro
                85                  90                  95
Thr Arg Asn Pro Pro Pro Ser Val Pro Gly Pro Pro Ser Asn Pro Ser
            100                 105                 110
Arg Glu Gly Gly Ser Pro Arg Pro Pro Ser Ser Pro Ser Pro Pro Ser
        115                 120                 125
Pro Ser Ser Asp Gly Leu Ser Thr Gly Val Val Val Gly Ile Ala Ile
    130                 135                 140
Gly Gly Val Ala Leu Leu Val Ile Val Thr Leu Ile Cys Leu Leu Cys
145                 150                 155                 160
Lys Lys Lys Arg Arg Arg Asp Glu Glu Asp Ala Tyr Tyr Val Pro Pro
                165                 170                 175
Pro Pro Pro Pro Gly Pro Lys Ala Gly Gly Pro Tyr Gly Gly Gln Gln
            180                 185                 190
Gln Gln Trp Arg Gln Gln Asn Ala Thr Pro Pro Ser Asp His Val Val
        195                 200                 205
Thr Ser Leu Pro Pro Pro Pro Lys Ala Pro Ser Pro Pro Arg Gln Pro
    210                 215                 220
Pro Pro Pro Pro Pro Pro Pro Phe Met Ser Ser Ser Gly Gly Ser Asp
225                 230                 235                 240
Tyr Ser Asp Arg Pro Val Leu Pro Pro Pro Ser Pro Gly Leu Val Leu
                245                 250                 255
Gly Phe Ser Lys Ser Thr Phe Thr Tyr Glu Glu Leu Ala Arg Ala Thr
            260                 265                 270
Asn Gly Phe Ser Glu Ala Asn Leu Leu Gly Gln Gly Gly Phe Gly Tyr
        275                 280                 285
Val His Lys Gly Val Leu Pro Ser Gly Lys Glu Val Ala Val Lys Gln
    290                 295                 300
Leu Lys Val Gly Ser Gly Gln Gly Glu Arg Glu Phe Gln Ala Glu Val
305                 310                 315                 320
Glu Ile Ile Ser Arg Val His His Arg His Leu Val Ser Leu Val Gly
                325                 330                 335
Tyr Cys Ile Ala Gly Ala Lys Arg Leu Leu Val Tyr Glu Phe Val Pro
            340                 345                 350
Asn Asn Asn Leu Glu Leu His Leu His Gly Glu Gly Arg Pro Thr Met
        355                 360                 365
Glu Trp Ser Thr Arg Leu Lys Ile Ala Leu Gly Ser Ala Lys Gly Leu
    370                 375                 380
Ser Tyr Leu His Glu Asp Cys Asn Pro Lys Ile Ile His Arg Asp Ile
385                 390                 395                 400
Lys Ala Ser Asn Ile Leu Ile Asp Phe Lys Phe Glu Ala Lys Val Ala
                405                 410                 415
Asp Phe Gly Leu Ala Lys Ile Ala Ser Asp Thr Asn Thr His Val Ser
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Ser Gly Lys Leu Thr Glu Lys Ser Asp Val Phe Ser Phe Gly Val Val
    450                 455                 460
Leu Leu Glu Leu Ile Thr Gly Arg Arg Pro Val Asp Ala Asn Asn Val
465                 470                 475                 480
Tyr Val Asp Asp Ser Leu Val Asp Trp Ala Arg Pro Leu Leu Asn Arg
                485                 490                 495
Ala Ser Glu Gln Gly Asp Phe Glu Gly Leu Ala Asp Ala Lys Met Asn
            500                 505                 510
Asn Gly Tyr Asp Arg Glu Glu Met Ala Arg Met Val Ala Cys Ala Ala
        515                 520                 525
Ala Cys Val Arg His Ser Ala Arg Arg Arg Pro Arg Met Ser Gln Ile
    530                 535                 540
Val Arg Ala Leu Glu Gly Asn Val Ser Leu Ser Asp Leu Asn Glu Gly
545                 550                 555                 560
Met Arg Pro Gly Gln Ser Asn Val Tyr Ser Ser Tyr Gly Gly Ser Thr
                565                 570                 575
Asp Tyr Asp Ser Ser Gln Tyr Asn Glu Asp Met Lys Lys Phe Arg Lys
            580                 585                 590
Met Ala Leu Gly Thr Gln Glu Tyr Asn Ala Thr Gly Glu Tyr Ser Asn
        595                 600                 605
Pro Thr Ser Asp Tyr Gly Leu Tyr Pro Ser Gly Ser Ser Ser Glu Gly
    610                 615                 620
Gln Thr Thr Arg Glu Met Glu Met Gly Lys Ile Lys Arg Thr Gly Gln
625                 630                 635                 640
Gly Tyr Ser Gly Pro Ser Leu
                645
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His Ser Leu His Leu Pro Phe Phe Arg Ser Lys Glu Ala Asp Met Ser
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Ser Ala Pro Ser Pro Gly Thr Gly Ser Pro Pro Ser Pro Pro Ser Asn
        35                  40                  45

Ser Thr Thr Thr Thr Pro Pro Pro Ala Ser Ala Pro Pro Pro Thr Thr
    50                  55                  60
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Pro Ser Ser Pro Pro Pro Pro Ser Thr Ile Pro Thr Ser Pro Pro Pro
65 70 75 80

Ser Ser Arg Ser Thr Pro Ser Ala Pro Pro Pro Ser Pro Pro Thr Pro
85 90 95

Ser Thr Pro Gly Ser Pro Pro Pro Leu Pro Gln Pro Ser Pro Pro Ala
100 105 110

Pro Thr Thr Pro Gly Ser Pro Pro Ala Pro Val Thr Pro Pro Thr Arg
115 120 125

Asn Pro Pro Pro Ser Val Pro Gly Pro Pro Ser Asn Pro Ser Arg Glu
130 135 140

Gly Gly Ser Pro Arg Pro Pro Ser Ser Pro Ser Pro Pro Ser Pro Ser
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Ser Asp Gly Leu Ser Thr Gly Val Val Val Gly Ile Ala Ile Gly Gly
165 170 175

Val Ala Leu Leu Val Ile Val Thr Leu Ile Cys Leu Leu Cys Lys Lys
180 185 190

Lys Arg Arg Arg Asp Glu Glu Asp Ala Tyr Tyr Val Pro Pro Pro Pro
195 200 205

Pro Pro Gly Pro Lys Ala Gly Gly Pro Tyr Gly Gly Gln Gln Gln Gln
210 215 220

Trp Arg Gln Gln Asn Ala Thr Pro Pro Ser Asp His Val Val Thr Ser
225 230 235 240

Leu Pro Pro Pro Pro Lys Ala Pro Ser Pro Pro Arg Gln Pro Pro Pro
245 250 255

Pro Pro Pro Pro Pro Phe Met Ser Ser Ser Gly Gly Ser Asp Tyr Ser
260 265 270

Asp Arg Pro Val Leu Pro Pro Pro Ser Pro Gly Leu Val Leu Gly Phe

275 280 285

Ser Lys Ser Thr Phe Thr Tyr Glu Glu Leu Ala Arg Ala Thr Asn Gly
290 295 300

Phe Ser Glu Ala Asn Leu Leu Gly Gln Gly Gly Phe Gly Tyr Val His
305 310 315 320

Lys Gly Val Leu Pro Ser Gly Lys Glu Val Ala Val Lys Gln Leu Lys
325 330 335

Val Gly Ser Gly Gln Gly Glu Arg Glu Phe Gln Ala Glu Val Glu Ile
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Ile Ser Arg Val His His Arg His Leu Val Ser Leu Val Gly Tyr Cys
355 360 365

Ile Ala Gly Ala Lys Arg Leu Leu Val Tyr Glu Phe Val Pro Asn Asn
370 375 380

Asn Leu Glu Leu His Leu His Gly Glu Gly Arg Pro Thr Met Glu Trp
385 390 395 400

Ser Thr Arg Leu Lys Ile Ala Leu Gly Ser Ala Lys Gly Leu Ser Tyr
405 410 415

Leu His Glu Asp Cys Asn Pro Lys Ile Ile His Arg Asp Ile Lys Ala
420 425 430

Ser Asn Ile Leu Ile Asp Phe Lys Phe Glu Ala Lys Val Ala Asp Phe
435 440 445

Gly Leu Ala Lys Ile Ala Ser Asp Thr Asn Thr His Val Ser Thr Arg
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Val Met Gly Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ala Ser Gly
465 470 475 480

Lys Leu Thr Glu Lys Ser Asp Val Phe Ser Phe Gly Val Val Leu Leu
485 490 495

Glu Leu Ile Thr Gly Arg Arg Pro Val Asp Ala Asn Asn Val Tyr Val
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Asp Asp Ser Leu Val Asp Trp Ala Arg Pro Leu Leu Asn Arg Ala Ser
515 520 525

Glu Gln Gly Asp Phe Glu Gly Leu Ala Asp Ala Lys Met Asn Asn Gly
530 535 540

Tyr Asp Arg Glu Glu Met Ala Arg Met Val Ala Cys Ala Ala Ala Cys
545 550 555 560

Val Arg His Ser Ala Arg Arg Arg Pro Arg Met Ser Gln Ile Val Arg
565 570 575

Ala Leu Glu Gly Asn Val Ser Leu Ser Asp Leu Asn Glu Gly Met Arg
580 585 590

Pro Gly Gln Ser Asn Val Tyr Ser Ser Tyr Gly Gly Ser Thr Asp Tyr
595 600 605

Asp Ser Ser Gln Tyr Asn Glu Asp Met Lys Lys Phe Arg Lys Met Ala
610 615 620

Leu Gly Thr Gln Glu Tyr Asn Ala Thr Gly Glu Tyr Ser Asn Pro Thr
625 630 635 640

Ser Asp Tyr Gly Leu Tyr Pro Ser Gly Ser Ser Ser Glu Gly Gln Thr
645 650 655

Thr Arg Glu Met Glu Met Gly Lys Ile Lys Arg Thr Gly Gln Gly Tyr
660 665 670

Ser Gly Pro Ser Leu Thr Arg Trp Glu Arg Asn Arg Val Phe Phe His
675 680 685

Tyr Phe Phe Lys Thr Val Lys Ile Glu Asn Cys Leu Thr Leu Ile Lys
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705 710 715 720

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<212> DNA
<213> Arabidopsis thaliana

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<212> DNA
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gct gat acc gct cct cca cca gag act cca tca gaa aac tca gct ctt   96
Ala Asp Thr Ala Pro Pro Pro Glu Thr Pro Ser Glu Asn Ser Ala Leu
             20                  25                  30

cca cct gtt gat tcc tct cct cct agt cca cca gct gat tca tca tca   144
Pro Pro Val Asp Ser Ser Pro Pro Ser Pro Pro Ala Asp Ser Ser Ser
         35                  40                  45

aca ccg ccg ctg tca gaa cca tcc act cct cct cca gat tca cag ctt   192
Thr Pro Pro Leu Ser Glu Pro Ser Thr Pro Pro Pro Asp Ser Gln Leu
     50                  55                  60

cct cct tta cct tcg att ctt cct ccg cta aca gat tct cca cct cca   240
Pro Pro Leu Pro Ser Ile Leu Pro Pro Leu Thr Asp Ser Pro Pro Pro
 65                  70                  75                  80

cct tcc gat tct tct cca ccc gtt gat tca acc cct tct ccg ccg cca   288
Pro Ser Asp Ser Ser Pro Pro Val Asp Ser Thr Pro Ser Pro Pro Pro
                 85                  90                  95

ccg acg tca aac gaa tct cct tct cct cca gaa gat tcc gaa aca cca   336
Pro Thr Ser Asn Glu Ser Pro Ser Pro Pro Glu Asp Ser Glu Thr Pro
            100                 105                 110

cct gct cca cca aat gaa tcc aat gac aac aac cct cct ccg tct caa   384
Pro Ala Pro Pro Asn Glu Ser Asn Asp Asn Asn Pro Pro Pro Ser Gln
        115                 120                 125

gat ctt caa tcg cct cct cca tcg tcg ccg tcg ccg aat gta gga ccc   432
Asp Leu Gln Ser Pro Pro Pro Ser Ser Pro Ser Pro Asn Val Gly Pro
    130                 135                 140

aca aac ccg gaa tca cca ccg tta caa tct cct cca gct cca cca gca   480
Thr Asn Pro Glu Ser Pro Pro Leu Gln Ser Pro Pro Ala Pro Pro Ala
145                 150                 155                 160

tca gat cct aca aat tca ccg cca gct tca cca tta gac cct acc aat   528
Ser Asp Pro Thr Asn Ser Pro Pro Ala Ser Pro Leu Asp Pro Thr Asn
                165                 170                 175

cct ccc cca ata caa cca tca gga cca gcc act tct cct ccg gct aat   576
Pro Pro Pro Ile Gln Pro Ser Gly Pro Ala Thr Ser Pro Pro Ala Asn
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                180                 185                 190

ccc aac gct ccg ccg agc cca ttc ccc aca gta cca ccc aaa act cct   624
Pro Asn Ala Pro Pro Ser Pro Phe Pro Thr Val Pro Pro Lys Thr Pro
        195                 200                 205

tct agt gga cct gtg gtg tct cca tct ctc aca tcc cct agt aaa gga   672
Ser Ser Gly Pro Val Val Ser Pro Ser Leu Thr Ser Pro Ser Lys Gly
    210                 215                 220

act cct act cca aac caa ggc aat gga gat ggc ggt ggc ggt ggt ggc   720
Thr Pro Thr Pro Asn Gln Gly Asn Gly Asp Gly Gly Gly Gly Gly Gly
225                 230                 235                 240

ggc tat caa ggg aag act atg gtt ggt atg gct gta gcc ggt ttc gca   768
Gly Tyr Gln Gly Lys Thr Met Val Gly Met Ala Val Ala Gly Phe Ala
                245                 250                 255

atc atg gcg ctt ata ggc gtt gtg ttc tta gtg aga aga aag aaa aag   816
Ile Met Ala Leu Ile Gly Val Val Phe Leu Val Arg Arg Lys Lys Lys
            260                 265                 270

aga aac att gat agc tat aat cac tca cag tac ttg cca cat ccc aat   864
Arg Asn Ile Asp Ser Tyr Asn His Ser Gln Tyr Leu Pro His Pro Asn
        275                 280                 285

ttc tct gtt aaa tca gat gga ttc tta tac ggt caa gat cca ggt aaa   912
Phe Ser Val Lys Ser Asp Gly Phe Leu Tyr Gly Gln Asp Pro Gly Lys
    290                 295                 300

gga tac tcc tct ggt cct aat ggt tca atg tat aac aat tca cag caa   960
Gly Tyr Ser Ser Gly Pro Asn Gly Ser Met Tyr Asn Asn Ser Gln Gln
305                 310                 315                 320

caa caa tcc tct atg gga aac agt tat ggt aca gct ggt ggt ggt tat  1008
Gln Gln Ser Ser Met Gly Asn Ser Tyr Gly Thr Ala Gly Gly Gly Tyr
                325                 330                 335

cct cat cat caa atg caa tca agt ggc aca cct gac tct gct ata ctc  1056
Pro His His Gln Met Gln Ser Ser Gly Thr Pro Asp Ser Ala Ile Leu
            340                 345                 350

gga agt ggc cag act cat ttc agt tac gaa gag ctt gct gag ata aca  1104
Gly Ser Gly Gln Thr His Phe Ser Tyr Glu Glu Leu Ala Glu Ile Thr
        355                 360                 365

caa ggc ttt gct cgc aaa aac att ctt gga gaa ggc gga ttt gga tgt  1152
Gln Gly Phe Ala Arg Lys Asn Ile Leu Gly Glu Gly Gly Phe Gly Cys
    370                 375                 380

gtc tat aaa ggt aca ttg cag gat ggt aaa gtt gtt gcg gtt aag cag  1200
Val Tyr Lys Gly Thr Leu Gln Asp Gly Lys Val Val Ala Val Lys Gln
385                 390                 395                 400
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ctt aaa gct gga agt gga caa ggt gac cgt gaa ttc aaa gca gag gtt   1248
Leu Lys Ala Gly Ser Gly Gln Gly Asp Arg Glu Phe Lys Ala Glu Val
                405                 410                 415

gag atc atc agc cgc gtt cat cat cgc cat ttg gtc tct ctg gtt ggt   1296
Glu Ile Ile Ser Arg Val His His Arg His Leu Val Ser Leu Val Gly
            420                 425                 430

tac tgc att tca gac cag cat aga ttg ctt atc tat gag tat gtt tct   1344
Tyr Cys Ile Ser Asp Gln His Arg Leu Leu Ile Tyr Glu Tyr Val Ser
        435                 440                 445

aat caa acc ttg gag cat cat ttg cat gag tgg tct aag aga gtc cgg   1392
Asn Gln Thr Leu Glu His His Leu His Glu Trp Ser Lys Arg Val Arg
    450                 455                 460

atc gct ata gga tca gcc aaa ggg ttg gca tat ctt cac gaa gac tgt   1440
Ile Ala Ile Gly Ser Ala Lys Gly Leu Ala Tyr Leu His Glu Asp Cys
465                 470                 475                 480

cat ccg aaa atc att cac aga gat ata aag tca gca aat att ctt cta   1488
His Pro Lys Ile Ile His Arg Asp Ile Lys Ser Ala Asn Ile Leu Leu
                485                 490                 495

gat gat gaa tat gaa gct cag gca ata atg aaa tcc tcc ttt tcg tta   1536
Asp Asp Glu Tyr Glu Ala Gln Ala Ile Met Lys Ser Ser Phe Ser Leu
            500                 505                 510

aat cta tct tat gac tgt aaa gtt tta gtt gct gat ttt gga ctt gct   1584
Asn Leu Ser Tyr Asp Cys Lys Val Leu Val Ala Asp Phe Gly Leu Ala
        515                 520                 525

aga ctc aat gat aca aca caa act cat gtt tca act cgg gtt atg gga   1632
Arg Leu Asn Asp Thr Thr Gln Thr His Val Ser Thr Arg Val Met Gly
    530                 535                 540

acc ttc ggg tac cta gcg ccg gaa tat gca tca agt gga aaa ttg act   1680
Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ser Ser Gly Lys Leu Thr
545                 550                 555                 560

gat aga tcc gat gta ttc tca ttc ggg gtt gtt ctc tta gag ctt gta   1728
Asp Arg Ser Asp Val Phe Ser Phe Gly Val Val Leu Leu Glu Leu Val
                565                 570                 575

act gga cgg aaa cca gtt gac cag act cag cct cta gga gaa gag agt   1776
Thr Gly Arg Lys Pro Val Asp Gln Thr Gln Pro Leu Gly Glu Glu Ser
            580                 585                 590

ttg gtt gaa tgg gcg cgc ccg ctg ctt ctc aaa gcc att gag acc gga   1824
Leu Val Glu Trp Ala Arg Pro Leu Leu Leu Lys Ala Ile Glu Thr Gly
        595                 600                 605

gat tta agc gaa ctg att gat aca cgg ctt gaa aag cgt tat gtg gag   1872
Asp Leu Ser Glu Leu Ile Asp Thr Arg Leu Glu Lys Arg Tyr Val Glu
```

```
    610                 615                 620

cat gaa gtc ttc aga atg atc gag aca gcc gct gca tgt gtt aga cat   1920
His Glu Val Phe Arg Met Ile Glu Thr Ala Ala Ala Cys Val Arg His
625                 630                 635                 640

tct ggt cca aaa cgc cca cgc atg gtt cag gtt gtg aga gca ttg gac   1968
Ser Gly Pro Lys Arg Pro Arg Met Val Gln Val Val Arg Ala Leu Asp
                645                 650                 655

tgc gac gga gac tcg gga gat att agc aac gga atc aaa att ggg caa   2016
Cys Asp Gly Asp Ser Gly Asp Ile Ser Asn Gly Ile Lys Ile Gly Gln
            660                 665                 670

agc aca act tat gac tca ggg caa tac aat gaa gac att atg aaa ttc   2064
Ser Thr Thr Tyr Asp Ser Gly Gln Tyr Asn Glu Asp Ile Met Lys Phe
        675                 680                 685

agg aaa atg gcg ttt ggt ggt gat aac agc gta gag tca gga ttg tac   2112
Arg Lys Met Ala Phe Gly Gly Asp Asn Ser Val Glu Ser Gly Leu Tyr
    690                 695                 700

agt gga aac tac tct gcc aaa agc tct tca gat ttc tca ggg aat gaa   2160
Ser Gly Asn Tyr Ser Ala Lys Ser Ser Ser Asp Phe Ser Gly Asn Glu
705                 710                 715                 720

tct gag act cgg cct ttc aac aac cga cgg ttc tga                   2196
Ser Glu Thr Arg Pro Phe Asn Asn Arg Arg Phe
                725                 730
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<211> 731
<212> PRT
<213> Arabidopsis thaliana

<400> 8

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            20                  25                  30

Pro Pro Val Asp Ser Ser Pro Pro Ser Pro Pro Ala Asp Ser Ser Ser
        35                  40                  45
Thr Pro Pro Leu Ser Glu Pro Ser Thr Pro Pro Pro Asp Ser Gln Leu
    50                  55                  60
Pro Pro Leu Pro Ser Ile Leu Pro Pro Leu Thr Asp Ser Pro Pro Pro
65                  70                  75                  80
Pro Ser Asp Ser Ser Pro Pro Val Asp Ser Thr Pro Ser Pro Pro Pro
                85                  90                  95
Pro Thr Ser Asn Glu Ser Pro Ser Pro Pro Glu Asp Ser Glu Thr Pro
            100                 105                 110
Pro Ala Pro Pro Asn Glu Ser Asn Asp Asn Asn Pro Pro Pro Ser Gln
        115                 120                 125
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Asp Leu Gln Ser Pro Pro Pro Ser Ser Pro Ser Pro Asn Val Gly Pro
    130                 135                 140
Thr Asn Pro Glu Ser Pro Pro Leu Gln Ser Pro Pro Ala Pro Pro Ala
145                 150                 155                 160
Ser Asp Pro Thr Asn Ser Pro Pro Ala Ser Pro Leu Asp Pro Thr Asn
                165                 170                 175
Pro Pro Pro Ile Gln Pro Ser Gly Pro Ala Thr Ser Pro Pro Ala Asn
            180                 185                 190
Pro Asn Ala Pro Pro Ser Pro Phe Pro Thr Val Pro Pro Lys Thr Pro
        195                 200                 205
Ser Ser Gly Pro Val Val Ser Pro Ser Leu Thr Ser Pro Ser Lys Gly
    210                 215                 220
Thr Pro Thr Pro Asn Gln Gly Asn Gly Asp Gly Gly Gly Gly Gly Gly
225                 230                 235                 240
Gly Tyr Gln Gly Lys Thr Met Val Gly Met Ala Val Ala Gly Phe Ala
                245                 250                 255
Ile Met Ala Leu Ile Gly Val Val Phe Leu Val Arg Arg Lys Lys Lys
            260                 265                 270
Arg Asn Ile Asp Ser Tyr Asn His Ser Gln Tyr Leu Pro His Pro Asn
        275                 280                 285
Phe Ser Val Lys Ser Asp Gly Phe Leu Tyr Gly Gln Asp Pro Gly Lys
    290                 295                 300
Gly Tyr Ser Ser Gly Pro Asn Gly Ser Met Tyr Asn Asn Ser Gln Gln
305                 310                 315                 320
Gln Gln Ser Ser Met Gly Asn Ser Tyr Gly Thr Ala Gly Gly Gly Tyr
                325                 330                 335
Pro His His Gln Met Gln Ser Ser Gly Thr Pro Asp Ser Ala Ile Leu
            340                 345                 350
Gly Ser Gly Gln Thr His Phe Ser Tyr Glu Glu Leu Ala Glu Ile Thr
        355                 360                 365
Gln Gly Phe Ala Arg Lys Asn Ile Leu Gly Glu Gly Gly Phe Gly Cys
    370                 375                 380
Val Tyr Lys Gly Thr Leu Gln Asp Gly Lys Val Val Ala Val Lys Gln
385                 390                 395                 400
Leu Lys Ala Gly Ser Gly Gln Gly Asp Arg Glu Phe Lys Ala Glu Val
                405                 410                 415
Glu Ile Ile Ser Arg Val His His Arg His Leu Val Ser Leu Val Gly
            420                 425                 430
Tyr Cys Ile Ser Asp Gln His Arg Leu Leu Ile Tyr Glu Tyr Val Ser
        435                 440                 445
Asn Gln Thr Leu Glu His His Leu His Glu Trp Ser Lys Arg Val Arg
    450                 455                 460
Ile Ala Ile Gly Ser Ala Lys Gly Leu Ala Tyr Leu His Glu Asp Cys
465                 470                 475                 480
His Pro Lys Ile Ile His Arg Asp Ile Lys Ser Ala Asn Ile Leu Leu
                485                 490                 495
Asp Asp Glu Tyr Glu Ala Gln Ala Ile Met Lys Ser Ser Phe Ser Leu
            500                 505                 510
Asn Leu Ser Tyr Asp Cys Lys Val Leu Val Ala Asp Phe Gly Leu Ala
        515                 520                 525
Arg Leu Asn Asp Thr Thr Gln Thr His Val Ser Thr Arg Val Met Gly
    530                 535                 540
Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ser Ser Gly Lys Leu Thr
545                 550                 555                 560
```

```
Asp Arg Ser Asp Val Phe Ser Phe Gly Val Val Leu Leu Glu Leu Val
                565                 570                 575
Thr Gly Arg Lys Pro Val Asp Gln Thr Gln Pro Leu Gly Glu Glu Ser
            580                 585                 590
Leu Val Glu Trp Ala Arg Pro Leu Leu Leu Lys Ala Ile Glu Thr Gly
        595                 600                 605
Asp Leu Ser Glu Leu Ile Asp Thr Arg Leu Glu Lys Arg Tyr Val Glu
    610                 615                 620
His Glu Val Phe Arg Met Ile Glu Thr Ala Ala Ala Cys Val Arg His
625                 630                 635                 640
Ser Gly Pro Lys Arg Pro Arg Met Val Gln Val Val Arg Ala Leu Asp
                645                 650                 655
Cys Asp Gly Asp Ser Gly Asp Ile Ser Asn Gly Ile Lys Ile Gly Gln
            660                 665                 670
Ser Thr Thr Tyr Asp Ser Gly Gln Tyr Asn Glu Asp Ile Met Lys Phe
        675                 680                 685
Arg Lys Met Ala Phe Gly Gly Asp Asn Ser Val Glu Ser Gly Leu Tyr
    690                 695                 700
Ser Gly Asn Tyr Ser Ala Lys Ser Ser Ser Asp Phe Ser Gly Asn Glu
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<210> 9
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<212> DNA
<213> Arabidopsis thaliana

<400> 9
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<210> 10
<211> 1902
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cca tct cca ccg tct aat acc aat tca acc acc tct tct ccg ccg gct   96
Pro Ser Pro Pro Ser Asn Thr Asn Ser Thr Thr Ser Ser Pro Pro Ala
             20                  25                  30

ccg tct cct cct tct cct aca cct cct caa gga gac tca tca tca tcg   144
Pro Ser Pro Pro Ser Pro Thr Pro Pro Gln Gly Asp Ser Ser Ser Ser
         35                  40                  45

cca cct cct gat tcc aca tct cca cca gct cca caa gct cct aac cct   192
Pro Pro Pro Asp Ser Thr Ser Pro Pro Ala Pro Gln Ala Pro Asn Pro
     50                  55                  60

cct aat tcc tct aat aac tct cct tcc cct ccg tca cag ggc ggt gga   240
Pro Asn Ser Ser Asn Asn Ser Pro Ser Pro Pro Ser Gln Gly Gly Gly
 65                  70                  75                  80

gga gaa aga gga aat gga gga aac aat ggt ggc aat gat act cca ccg   288
Gly Glu Arg Gly Asn Gly Gly Asn Asn Gly Gly Asn Asp Thr Pro Pro
                 85                  90                  95

tca cgc ggc tct cct cct tct cct cct tct agg agt aat gga gat aat   336
Ser Arg Gly Ser Pro Pro Ser Pro Pro Ser Arg Ser Asn Gly Asp Asn
            100                 105                 110

ggt ggt agc aga tca tcg cca cca gga gac act gga ggc tct cgc tca   384
Gly Gly Ser Arg Ser Ser Pro Pro Gly Asp Thr Gly Gly Ser Arg Ser
        115                 120                 125
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gac aac cct cct tct agc gga gga agc agt gga gga ggt gga ggt gga   432
Asp Asn Pro Pro Ser Ser Gly Gly Ser Ser Gly Gly Gly Gly Gly Gly
    130                 135                 140

aga agt aat acg aat aca gcg atc ata gtt ggt gta tta gtc gga gct   480

Arg Ser Asn Thr Asn Thr Ala Ile Ile Val Gly Val Leu Val Gly Ala
145                 150                 155                 160

gga ctt ttg atg atc gtt ctt att att gtg tgt ctt aga cgc aaa aag   528
Gly Leu Leu Met Ile Val Leu Ile Ile Val Cys Leu Arg Arg Lys Lys
                165                 170                 175

aag aga aaa gac tcc ttc tac cct gaa ccc atg aaa gga aac caa tat   576
Lys Arg Lys Asp Ser Phe Tyr Pro Glu Pro Met Lys Gly Asn Gln Tyr
            180                 185                 190

caa tac tat gga aac aac aac aac aac aat gct tca cag aat tat ccg   624
Gln Tyr Tyr Gly Asn Asn Asn Asn Asn Asn Ala Ser Gln Asn Tyr Pro
        195                 200                 205

aat tgg cac cta aat tca caa ggc caa aac caa caa tct act ggt ggt   672
Asn Trp His Leu Asn Ser Gln Gly Gln Asn Gln Gln Ser Thr Gly Gly
    210                 215                 220

tgg gga ggc ggt gga cca tca ccg cct cct cct ccg cgg atg cct aca   720
Trp Gly Gly Gly Gly Pro Ser Pro Pro Pro Pro Arg Met Pro Thr
225                 230                 235                 240

agc gga gaa gat tct tcc atg tac tca ggc cca tca cgc cca gtt tta   768
Ser Gly Glu Asp Ser Ser Met Tyr Ser Gly Pro Ser Arg Pro Val Leu
                245                 250                 255

cct cct cct tcg cct gct cta gcc ctc gga ttc aac aag agc act ttt   816
Pro Pro Pro Ser Pro Ala Leu Ala Leu Gly Phe Asn Lys Ser Thr Phe
            260                 265                 270

act tac caa gag ctt gcg gct gca aca gga ggg ttt acg gat gct aac   864
Thr Tyr Gln Glu Leu Ala Ala Ala Thr Gly Gly Phe Thr Asp Ala Asn
        275                 280                 285

ctt ttg gga cag gga gga ttt ggg tat gtc cat aaa gga gtc ttg cct   912
Leu Leu Gly Gln Gly Gly Phe Gly Tyr Val His Lys Gly Val Leu Pro
    290                 295                 300

agc ggg aaa gaa gta gca gtt aag agt tta aaa gcg ggt agc gga caa   960
Ser Gly Lys Glu Val Ala Val Lys Ser Leu Lys Ala Gly Ser Gly Gln
305                 310                 315                 320

gga gag agg gag ttt caa gct gag gtc gat atc att agc cgt gtg cat  1008
Gly Glu Arg Glu Phe Gln Ala Glu Val Asp Ile Ile Ser Arg Val His
                325                 330                 335

cat cgg tat ctt gtt tct ttg gtt gga tat tgc ata gct gat gga cag  1056
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His Arg Tyr Leu Val Ser Leu Val Gly Tyr Cys Ile Ala Asp Gly Gln
            340                 345                 350

agg atg ttg gtt tat gag ttt gtt cct aac aaa act ttg gaa tat cat   1104
Arg Met Leu Val Tyr Glu Phe Val Pro Asn Lys Thr Leu Glu Tyr His
        355                 360                 365

ctt cat ggg aaa aat ctt ccg gta atg gag ttc tcc act agg ttg cgt   1152
Leu His Gly Lys Asn Leu Pro Val Met Glu Phe Ser Thr Arg Leu Arg
    370                 375                 380

atc gcc tta ggt gct gcg aaa gga ctc gct tac ctt cac gaa gac tgc   1200
Ile Ala Leu Gly Ala Ala Lys Gly Leu Ala Tyr Leu His Glu Asp Cys
385                 390                 395                 400

cat cct cgg atc att cac cgc gac atc aag tct gca aat att ctc ttg   1248
His Pro Arg Ile Ile His Arg Asp Ile Lys Ser Ala Asn Ile Leu Leu
                405                 410                 415

gac ttc aac ttt gat gct atg gtg gct gat ttt gga tta gct aag tta   1296
Asp Phe Asn Phe Asp Ala Met Val Ala Asp Phe Gly Leu Ala Lys Leu
            420                 425                 430

aca tct gat aac aac act cat gta tct act cgt gtg atg gga act ttc   1344
Thr Ser Asp Asn Asn Thr His Val Ser Thr Arg Val Met Gly Thr Phe
        435                 440                 445

gga tat cta gct cca gaa tat gct tca agc ggt aaa tta acc gag aaa   1392
Gly Tyr Leu Ala Pro Glu Tyr Ala Ser Ser Gly Lys Leu Thr Glu Lys
    450                 455                 460

tcc gat gtt ttc tct tac gga gtt atg tta ttg gaa ctt ata act gga   1440
Ser Asp Val Phe Ser Tyr Gly Val Met Leu Leu Glu Leu Ile Thr Gly
465                 470                 475                 480

aaa cga ccg gtt gat aat agc atc acc atg gac gac acc tta gta gat   1488
Lys Arg Pro Val Asp Asn Ser Ile Thr Met Asp Asp Thr Leu Val Asp
                485                 490                 495

tgg gct cgg cct ctt atg gct cgc gcg cta gaa gat gga aac ttt aat   1536
Trp Ala Arg Pro Leu Met Ala Arg Ala Leu Glu Asp Gly Asn Phe Asn
            500                 505                 510

gag ctc gca gat gcg agg ctt gaa ggc aac tac aac ccg caa gaa atg   1584
Glu Leu Ala Asp Ala Arg Leu Glu Gly Asn Tyr Asn Pro Gln Glu Met
        515                 520                 525

gct cga atg gtg act tgt gcc gct gct agc att cgt cat tcg ggg cgt   1632
Ala Arg Met Val Thr Cys Ala Ala Ala Ser Ile Arg His Ser Gly Arg
    530                 535                 540

aaa cgt cca aag atg agc cag ata gta aga gcg tta gaa gga gaa gtg   1680
Lys Arg Pro Lys Met Ser Gln Ile Val Arg Ala Leu Glu Gly Glu Val
545                 550                 555                 560
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tcc tta gat gct tta aac gaa ggt gtg aag cca gga cac agt aac gtt   1728
Ser Leu Asp Ala Leu Asn Glu Gly Val Lys Pro Gly His Ser Asn Val
                565                 570                 575

tac ggg tca ttg gga gca agc tcg gat tat agt cag aca tct tac aat   1776
Tyr Gly Ser Leu Gly Ala Ser Ser Asp Tyr Ser Gln Thr Ser Tyr Asn
            580                 585                 590

gca gac atg aag aaa ttc aga cag ata gct ttg tcg agc caa gaa ttc   1824
Ala Asp Met Lys Lys Phe Arg Gln Ile Ala Leu Ser Ser Gln Glu Phe
        595                 600                 605

cca gtc agt gac tgt gaa gga aca tct agt aat gat tct aga gat atg   1872
Pro Val Ser Asp Cys Glu Gly Thr Ser Ser Asn Asp Ser Arg Asp Met
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             20                  25                  30
Pro Ser Pro Pro Ser Pro Thr Pro Pro Gln Gly Asp Ser Ser Ser Ser
         35                  40                  45
Pro Pro Pro Asp Ser Thr Ser Pro Pro Ala Pro Gln Ala Pro Asn Pro
     50                  55                  60
Pro Asn Ser Ser Asn Asn Ser Pro Ser Pro Pro Ser Gln Gly Gly Gly
 65                  70                  75                  80
Gly Glu Arg Gly Asn Gly Gly Asn Asn Gly Gly Asn Asp Thr Pro Pro
                 85                  90                  95
Ser Arg Gly Ser Pro Pro Ser Pro Pro Ser Arg Ser Asn Gly Asp Asn
            100                 105                 110
Gly Gly Ser Arg Ser Ser Pro Pro Gly Asp Thr Gly Gly Ser Arg Ser
        115                 120                 125
Asp Asn Pro Pro Ser Ser Gly Gly Ser Ser Gly Gly Gly Gly Gly Gly
    130                 135                 140
Arg Ser Asn Thr Asn Thr Ala Ile Ile Val Gly Val Leu Val Gly Ala
145                 150                 155                 160
Gly Leu Leu Met Ile Val Leu Ile Ile Val Cys Leu Arg Arg Lys Lys
                165                 170                 175
Lys Arg Lys Asp Ser Phe Tyr Pro Glu Pro Met Lys Gly Asn Gln Tyr
            180                 185                 190
Gln Tyr Tyr Gly Asn Asn Asn Asn Asn Asn Ala Ser Gln Asn Tyr Pro
        195                 200                 205
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Asn Trp His Leu Asn Ser Gln Gly Gln Asn Gln Gln Ser Thr Gly Gly
210 215 220
Trp Gly Gly Gly Gly Pro Ser Pro Pro Pro Pro Pro Arg Met Pro Thr
225 230 235 240
Ser Gly Glu Asp Ser Ser Met Tyr Ser Gly Pro Ser Arg Pro Val Leu
245 250 255
Pro Pro Pro Ser Pro Ala Leu Ala Leu Gly Phe Asn Lys Ser Thr Phe
260 265 270
Thr Tyr Gln Glu Leu Ala Ala Ala Thr Gly Gly Phe Thr Asp Ala Asn
275 280 285
Leu Leu Gly Gln Gly Gly Phe Gly Tyr Val His Lys Gly Val Leu Pro
290 295 300
Ser Gly Lys Glu Val Ala Val Lys Ser Leu Lys Ala Gly Ser Gly Gln
305 310 315 320
Gly Glu Arg Glu Phe Gln Ala Glu Val Asp Ile Ile Ser Arg Val His
325 330 335
His Arg Tyr Leu Val Ser Leu Val Gly Tyr Cys Ile Ala Asp Gly Gln
340 345 350
Arg Met Leu Val Tyr Glu Phe Val Pro Asn Lys Thr Leu Glu Tyr His
355 360 365
Leu His Gly Lys Asn Leu Pro Val Met Glu Phe Ser Thr Arg Leu Arg
370 375 380
Ile Ala Leu Gly Ala Ala Lys Gly Leu Ala Tyr Leu His Glu Asp Cys
385 390 395 400
His Pro Arg Ile Ile His Arg Asp Ile Lys Ser Ala Asn Ile Leu Leu
405 410 415
Asp Phe Asn Phe Asp Ala Met Val Ala Asp Phe Gly Leu Ala Lys Leu
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Thr Ser Asp Asn Asn Thr His Val Ser Thr Arg Val Met Gly Thr Phe
435 440 445
Gly Tyr Leu Ala Pro Glu Tyr Ala Ser Ser Gly Lys Leu Thr Glu Lys
450 455 460
Ser Asp Val Phe Ser Tyr Gly Val Met Leu Leu Glu Leu Ile Thr Gly
465 470 475 480
Lys Arg Pro Val Asp Asn Ser Ile Thr Met Asp Asp Thr Leu Val Asp
485 490 495
Trp Ala Arg Pro Leu Met Ala Arg Ala Leu Glu Asp Gly Asn Phe Asn
500 505 510
Glu Leu Ala Asp Ala Arg Leu Glu Gly Asn Tyr Asn Pro Gln Glu Met
515 520 525
Ala Arg Met Val Thr Cys Ala Ala Ala Ser Ile Arg His Ser Gly Arg
530 535 540
Lys Arg Pro Lys Met Ser Gln Ile Val Arg Ala Leu Glu Gly Glu Val
545 550 555 560
Ser Leu Asp Ala Leu Asn Glu Gly Val Lys Pro Gly His Ser Asn Val
565 570 575
Tyr Gly Ser Leu Gly Ala Ser Ser Asp Tyr Ser Gln Thr Ser Tyr Asn
580 585 590
Ala Asp Met Lys Lys Phe Arg Gln Ile Ala Leu Ser Ser Gln Glu Phe
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aagttcaaga aactggcgtt agagaataaa gaatatcaaa gcagtgaata tggtggaaca 1980
agtgagtatg gcttaaaccc ttctgcttca agtagtgaag aaatgaatag aggctcaatg 2040
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ggg aca cca ccg tca aac gga aca tcg ccg tct aat gag tca tcg ccg   96
Gly Thr Pro Pro Ser Asn Gly Thr Ser Pro Ser Asn Glu Ser Ser Pro
            20                  25                  30

cca aca cca cct tct tca cca cca cca tca tca ata tct gct cct ccg  144
Pro Thr Pro Pro Ser Ser Pro Pro Pro Ser Ser Ile Ser Ala Pro Pro
        35                  40                  45

cca gat atc tcc gct tct ttt tca ccg ccg cct gca cca cca acg caa  192
Pro Asp Ile Ser Ala Ser Phe Ser Pro Pro Pro Ala Pro Pro Thr Gln
    50                  55                  60

gaa acg tca cct cct aca tct ccg tcc tca tcg ccg cct gtt gta gct  240
Glu Thr Ser Pro Pro Thr Ser Pro Ser Ser Ser Pro Pro Val Val Ala
65                  70                  75                  80

aat ccg tca ccg cag act cca gag aat cct tct cca cct gca cct gaa  288
Asn Pro Ser Pro Gln Thr Pro Glu Asn Pro Ser Pro Pro Ala Pro Glu
                85                  90                  95

ggc tca act cct gta acg cca cct gca cca cca caa aca ccg tcg aac  336
Gly Ser Thr Pro Val Thr Pro Pro Ala Pro Pro Gln Thr Pro Ser Asn
            100                 105                 110

caa tca ccg gaa aga cca act cct cct tct cct ggt gcc aat gat gac  384
Gln Ser Pro Glu Arg Pro Thr Pro Pro Ser Pro Gly Ala Asn Asp Asp
        115                 120                 125

cga aac aga acc aat ggc gga aac aac aac aga gac ggc tcc aca cca  432
Arg Asn Arg Thr Asn Gly Gly Asn Asn Asn Arg Asp Gly Ser Thr Pro
    130                 135                 140

tca cca ccg tcg tca ggg aac aga act tcc ggt gac ggt ggc tca cct  480
Ser Pro Pro Ser Ser Gly Asn Arg Thr Ser Gly Asp Gly Gly Ser Pro
145                 150                 155                 160

tca cca cct cgg tcg ata agc cct cct cag aat agt gga gat tca gac  528
Ser Pro Pro Arg Ser Ile Ser Pro Pro Gln Asn Ser Gly Asp Ser Asp
                165                 170                 175

tca tca tcg ggg ctt ttg ctt cta ctt gca gtg tgt att tgc atc tgt  576
Ser Ser Ser Gly Leu Leu Leu Leu Leu Ala Val Cys Ile Cys Ile Cys
            180                 185                 190

tgc aac agg aag aag aag aag aaa tct cct cag gtc aac cac atg cac  624
Cys Asn Arg Lys Lys Lys Lys Lys Ser Pro Gln Val Asn His Met His
        195                 200                 205
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tac tac aat aac aat cct tat gga gga gca ccc tca ggt aat ggt ggt   672
Tyr Tyr Asn Asn Asn Pro Tyr Gly Gly Ala Pro Ser Gly Asn Gly Gly
    210                 215                 220

tat tac aag gga aca cct caa gat cat gtg gtg aat atg gct ggt caa   720
Tyr Tyr Lys Gly Thr Pro Gln Asp His Val Val Asn Met Ala Gly Gln
225                 230                 235                 240

gga ggt ggg aat tgg ggt cca cag caa cct gtg tct ggt cct cac agt   768
Gly Gly Gly Asn Trp Gly Pro Gln Gln Pro Val Ser Gly Pro His Ser
                245                 250                 255

gat gct tcc aac tta acc ggt cga act gct ata ccg tca cct caa gct   816
Asp Ala Ser Asn Leu Thr Gly Arg Thr Ala Ile Pro Ser Pro Gln Ala
            260                 265                 270

gca act ctt ggt cac aac caa agc act ttc aca tac gat gaa ctg tcc   864
Ala Thr Leu Gly His Asn Gln Ser Thr Phe Thr Tyr Asp Glu Leu Ser
        275                 280                 285

att gca aca gaa ggt ttc gct cag tca aat ttg cta gga caa gga gga   912
Ile Ala Thr Glu Gly Phe Ala Gln Ser Asn Leu Leu Gly Gln Gly Gly
    290                 295                 300

ttt ggg tat gtt cat aaa gga gtt ctg cct agt ggc aaa gaa gtt gca   960
Phe Gly Tyr Val His Lys Gly Val Leu Pro Ser Gly Lys Glu Val Ala
305                 310                 315                 320

gtg aag agt ctt aaa ctt gga agt gga caa ggg gaa cgc gag ttt caa  1008
Val Lys Ser Leu Lys Leu Gly Ser Gly Gln Gly Glu Arg Glu Phe Gln
                325                 330                 335

gca gag gtt gat atc att agc cgt gtc cat cat cgt cat ctc gtt tct  1056
Ala Glu Val Asp Ile Ile Ser Arg Val His His Arg His Leu Val Ser
            340                 345                 350

ctt gtt gga tat tgc atc tct ggt ggt caa aga ctt ttg gtt tat gag  1104
Leu Val Gly Tyr Cys Ile Ser Gly Gly Gln Arg Leu Leu Val Tyr Glu
        355                 360                 365

ttt ata cct aac aac act ctt gaa ttt cat ctt cat gga aag ggt cgt  1152
Phe Ile Pro Asn Asn Thr Leu Glu Phe His Leu His Gly Lys Gly Arg
    370                 375                 380

ccg gtt ttg gat tgg cct aca aga gtg aag att gca ttg gga tca gct  1200
Pro Val Leu Asp Trp Pro Thr Arg Val Lys Ile Ala Leu Gly Ser Ala
385                 390                 395                 400

aga ggc ctt gca tat ttg cat gaa gac tgt aag aaa atc ttt atc tca  1248
Arg Gly Leu Ala Tyr Leu His Glu Asp Cys Lys Lys Ile Phe Ile Ser
                405                 410                 415

cat att tgc atc agt cac cct cgc att atc cac aga gat atc aaa gct  1296
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His Ile Cys Ile Ser His Pro Arg Ile Ile His Arg Asp Ile Lys Ala
            420                 425                 430

gca aac att ctt ctt gat ttc agt ttt gag acc aag gtg gca gat ttt   1344
Ala Asn Ile Leu Leu Asp Phe Ser Phe Glu Thr Lys Val Ala Asp Phe
        435                 440                 445

gga ttg gct aag cta tct caa gac aac tat act cat gtc tcc act cgc   1392
Gly Leu Ala Lys Leu Ser Gln Asp Asn Tyr Thr His Val Ser Thr Arg
    450                 455                 460

gtc atg gga act ttt gga tac tta gct cca gag tat gca tca agc gga   1440
Val Met Gly Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ser Ser Gly
465                 470                 475                 480

aag tta tcc gac aaa tct gat gtt ttc tca ttt gga gta atg ctt ctt   1488
Lys Leu Ser Asp Lys Ser Asp Val Phe Ser Phe Gly Val Met Leu Leu
                485                 490                 495

gag ctc ata acc gga aga cct cct ctg gat cta act gga gaa atg gaa   1536
Glu Leu Ile Thr Gly Arg Pro Pro Leu Asp Leu Thr Gly Glu Met Glu
            500                 505                 510

gat agc ttg gta gat tgg gca agg cct ttg tgt ttg aaa gca gct caa   1584
Asp Ser Leu Val Asp Trp Ala Arg Pro Leu Cys Leu Lys Ala Ala Gln
        515                 520                 525

gat gga gat tac aac caa ttg gct gat cca cgt cta gag cta aac tac   1632
Asp Gly Asp Tyr Asn Gln Leu Ala Asp Pro Arg Leu Glu Leu Asn Tyr
    530                 535                 540

agt cat caa gag atg gtt caa atg gct tct tgt gca gct gca gca atc   1680
Ser His Gln Glu Met Val Gln Met Ala Ser Cys Ala Ala Ala Ala Ile
545                 550                 555                 560

aga cat tca gca aga aga cgg cct aag atg agc cag gtt caa aaa ctc   1728
Arg His Ser Ala Arg Arg Arg Pro Lys Met Ser Gln Val Gln Lys Leu
                565                 570                 575

ata cca ctt gtt ggt tct att att gta cga gca cta gaa gga gat atg   1776
Ile Pro Leu Val Gly Ser Ile Ile Val Arg Ala Leu Glu Gly Asp Met
            580                 585                 590

tca atg gat gat cta agt gag gga aca aga cca gga caa agc acg tac   1824
Ser Met Asp Asp Leu Ser Glu Gly Thr Arg Pro Gly Gln Ser Thr Tyr
        595                 600                 605

ttg agc ccc ggg agc gtg agc tca gag tat gac gca agc tcg tac acg   1872
Leu Ser Pro Gly Ser Val Ser Ser Glu Tyr Asp Ala Ser Ser Tyr Thr
    610                 615                 620

gca gac atg aaa aag ttc aag aaa ctg gcg tta gag aat aaa gaa tat   1920
Ala Asp Met Lys Lys Phe Lys Lys Leu Ala Leu Glu Asn Lys Glu Tyr
625                 630                 635                 640
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caa agc agt gaa tat ggt gga aca agt gag tat ggc tta aac cct tct   1968
Gln Ser Ser Glu Tyr Gly Gly Thr Ser Glu Tyr Gly Leu Asn Pro Ser
                645                 650                 655

gct tca agt agt gaa gaa atg aat aga ggc tca atg aaa cgc aat cct   2016
Ala Ser Ser Ser Glu Glu Met Asn Arg Gly Ser Met Lys Arg Asn Pro
            660                 665                 670

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Gln Leu
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            20                  25                  30
Pro Thr Pro Pro Ser Ser Pro Pro Pro Ser Ser Ile Ser Ala Pro Pro
        35                  40                  45
Pro Asp Ile Ser Ala Ser Phe Ser Pro Pro Pro Ala Pro Pro Thr Gln
    50                  55                  60
Glu Thr Ser Pro Pro Thr Ser Pro Ser Ser Ser Pro Pro Val Val Ala
65                  70                  75                  80
Asn Pro Ser Pro Gln Thr Pro Glu Asn Pro Ser Pro Pro Ala Pro Glu
                85                  90                  95
Gly Ser Thr Pro Val Thr Pro Pro Ala Pro Pro Gln Thr Pro Ser Asn
            100                 105                 110
Gln Ser Pro Glu Arg Pro Thr Pro Pro Ser Pro Gly Ala Asn Asp Asp
        115                 120                 125
Arg Asn Arg Thr Asn Gly Gly Asn Asn Asn Arg Asp Gly Ser Thr Pro
    130                 135                 140
Ser Pro Pro Ser Ser Gly Asn Arg Thr Ser Gly Asp Gly Gly Ser Pro
145                 150                 155                 160
Ser Pro Pro Arg Ser Ile Ser Pro Pro Gln Asn Ser Gly Asp Ser Asp
                165                 170                 175
Ser Ser Ser Gly Leu Leu Leu Leu Leu Ala Val Cys Ile Cys Ile Cys
            180                 185                 190
Cys Asn Arg Lys Lys Lys Lys Lys Ser Pro Gln Val Asn His Met His
        195                 200                 205
Tyr Tyr Asn Asn Asn Pro Tyr Gly Gly Ala Pro Ser Gly Asn Gly Gly
    210                 215                 220
Tyr Tyr Lys Gly Thr Pro Gln Asp His Val Val Asn Met Ala Gly Gln
225                 230                 235                 240
Gly Gly Gly Asn Trp Gly Pro Gln Gln Pro Val Ser Gly Pro His Ser
                245                 250                 255
Asp Ala Ser Asn Leu Thr Gly Arg Thr Ala Ile Pro Ser Pro Gln Ala
            260                 265                 270
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Ala Thr Leu Gly His Asn Gln Ser Thr Phe Thr Tyr Asp Glu Leu Ser
275 280 285
Ile Ala Thr Glu Gly Phe Ala Gln Ser Asn Leu Leu Gly Gln Gly Gly
290 295 300
Phe Gly Tyr Val His Lys Gly Val Leu Pro Ser Gly Lys Glu Val Ala
305 310 315 320
Val Lys Ser Leu Lys Leu Gly Ser Gly Gln Gly Glu Arg Glu Phe Gln
325 330 335
Ala Glu Val Asp Ile Ile Ser Arg Val His His Arg His Leu Val Ser
340 345 350
Leu Val Gly Tyr Cys Ile Ser Gly Gly Gln Arg Leu Leu Val Tyr Glu
355 360 365
Phe Ile Pro Asn Asn Thr Leu Glu Phe His Leu His Gly Lys Gly Arg
370 375 380
Pro Val Leu Asp Trp Pro Thr Arg Val Lys Ile Ala Leu Gly Ser Ala
385 390 395 400
Arg Gly Leu Ala Tyr Leu His Glu Asp Cys Lys Lys Ile Phe Ile Ser
405 410 415
His Ile Cys Ile Ser His Pro Arg Ile Ile His Arg Asp Ile Lys Ala
420 425 430
Ala Asn Ile Leu Leu Asp Phe Ser Phe Glu Thr Lys Val Ala Asp Phe
435 440 445
Gly Leu Ala Lys Leu Ser Gln Asp Asn Tyr Thr His Val Ser Thr Arg
450 455 460
Val Met Gly Thr Phe Gly Tyr Leu Ala Pro Glu Tyr Ala Ser Ser Gly
465 470 475 480
Lys Leu Ser Asp Lys Ser Asp Val Phe Ser Phe Gly Val Met Leu Leu
485 490 495
Glu Leu Ile Thr Gly Arg Pro Pro Leu Asp Leu Thr Gly Glu Met Glu
500 505 510
Asp Ser Leu Val Asp Trp Ala Arg Pro Leu Cys Leu Lys Ala Ala Gln
515 520 525
Asp Gly Asp Tyr Asn Gln Leu Ala Asp Pro Arg Leu Glu Leu Asn Tyr
530 535 540
Ser His Gln Glu Met Val Gln Met Ala Ser Cys Ala Ala Ala Ala Ile
545 550 555 560
Arg His Ser Ala Arg Arg Arg Pro Lys Met Ser Gln Val Gln Lys Leu
565 570 575
Ile Pro Leu Val Gly Ser Ile Ile Val Arg Ala Leu Glu Gly Asp Met
580 585 590
Ser Met Asp Asp Leu Ser Glu Gly Thr Arg Pro Gly Gln Ser Thr Tyr
595 600 605
Leu Ser Pro Gly Ser Val Ser Ser Glu Tyr Asp Ala Ser Ser Tyr Thr
610 615 620
Ala Asp Met Lys Lys Phe Lys Lys Leu Ala Leu Glu Asn Lys Glu Tyr
625 630 635 640
Gln Ser Ser Glu Tyr Gly Gly Thr Ser Glu Tyr Gly Leu Asn Pro Ser
645 650 655
Ala Ser Ser Ser Glu Glu Met Asn Arg Gly Ser Met Lys Arg Asn Pro
660 665 670
Gln Leu

<210> 15
<211> 2261
<212> DNA
<213> Arabidopsis thaliana

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cctccagctc ctcctttgtc tcctcttccc ccaccattga gctctcctcc gccgttgcct 180
tcaccaccgc ctctctccgc tcccaccgct tccccaccgc ctcttccggt tgaatcccca 240
ccgtctcctc ctatagaatc accaccgcct cctctactgg aatcacctcc tcctcctccg 300
ctggaatctc catctccacc gtctcctcac gtctcagctc cttccggttc accgccatta 360
cccttccttc ccgccaaacc ttctccgccg ccttcttcac ctccctccga gacagttccg 420
ccgggaaata cgatttctcc accacctcgt tcacttccct ccgaatcaac cccgccggtg 480
aacacagctt ctcctccacc gccatctcct cctcgccgcc gtagtggccc taagccttcg 540
tttcctcctc ccatcaattc ttctccacca aatccttctc cgaacactcc gtcactccca 600
gaaacttctc ctccacctaa accaccgctc tcaacgacgc catttccctc ctcatccact 660
cccccgccta agaagtcccc tgcagcagta actcttcctt tctttgggcc agcgggccaa 720
ttaccggatg ggaccgtagc acctcctatt gggcctgtta tagagcccaa gacgagtcca 780
gccgaatcaa tatctccggg aacgccacag ccactggttc cgaagagtct acctgtaacg 840
acgtcgtatc accgatcatc cgccggattc ttatttggcg gtgtaatcgt tggagctctt 900
ctactaattc tgttaggtct tctctttgtc ttctacagag ctaccagaaa tagaaataac 960
aacagcagct ctgctcatca tcaatccaaa actccctcaa aagttcaaca tcatcggggc 1020
ggtaatgctg gtacgaacca ggcacatgtt atcacaatgc caccaccaat ccatgctaaa 1080
tatatatcta gtggaggttg tgatacgaag gagaacaatt ctgttgcgaa aaacatttca 1140
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gagaaccttt tgggagaagg cggtttcgga tatgttcaca aaggagtgtt gaaaaacggg 1260
tcagaagttg cggtgaagca gctgaagatt gggagctatc aaggggaaag agaattccaa 1320
gctgaggttg acacaatcag tagggttcat cataagcacc tcgtttcatt ggttggttat 1380
tgcgttaatg gagataaaag actcttggtt tacgagtttg ttcctaaaga taccttggag 1440
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gtaggagcag caaaaggatt agcttatctt catgaggatt gcagtccaac tataattcac 1560
cgtgatatca aagcagctaa tatccttcta gattccaaat ttgaggcaaa ggtctctgac 1620
tttggactag ccaagttttt ctcagacacc aattcatcat tcactcatat ctctactcga 1680
gtggtaggaa ctttcggata catggctcca gaatacgcgt ccagtggtaa agtaactgat 1740
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attttcgcca aagattcttc cacaaaccag agtttagtag actgggcgag gccattgctt 1860
acgaaagcaa tctctggaga aagttttgac tttcttgtag actcaaggtt ggagaagaat 1920
tacgatacaa ctcagatggc aaacatggct gcttgtgctg ctgcttgcat acgccaatca 1980
gcttggcttc ggcctagaat gagccaggta gtacgtgctc ttgaaggcga ggtggccctg 2040
agaaaggtcg aagagactgg gaatagcgtg acctatagct cttctgaaaa cccgaatgac 2100
atcacaccac ggtatggaac aaataagagg agattcgaca caggttcaag cgatggttac 2160
acttcagaat atggagttaa cccttctcag tcgagcagtg aacatcaaca ggtgaatact 2220
cagttcacag gttcaatagg gcaagtttca ccacaattat t 2261

<210> 16
<211> 2196
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> CDS
<222> (1)..(2196)

<400> 16

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Met Ser Leu Ser Pro Ser Ser Ser Pro Ala Pro Ala Thr Ser Pro Pro
  1               5                  10                  15

gcc atg tca tta cct ccg gca gat tcc gta cct gac acg tca tca cct   96
Ala Met Ser Leu Pro Pro Ala Asp Ser Val Pro Asp Thr Ser Ser Pro
            20                  25                  30

cca gct cct cct ttg tct cct ctt ccc cca cca ttg agc tct cct ccg  144
Pro Ala Pro Pro Leu Ser Pro Leu Pro Pro Pro Leu Ser Ser Pro Pro
        35                  40                  45

ccg ttg cct tca cca ccg cct ctc tcc gct ccc acc gct tcc cca ccg  192
Pro Leu Pro Ser Pro Pro Pro Leu Ser Ala Pro Thr Ala Ser Pro Pro
    50                  55                  60

cct ctt ccg gtt gaa tcc cca ccg tct cct cct ata gaa tca cca ccg  240
Pro Leu Pro Val Glu Ser Pro Pro Ser Pro Pro Ile Glu Ser Pro Pro
65                  70                  75                  80

cct cct cta ctg gaa tca cct cct cct cct ccg ttg gaa tct cca tct  288
Pro Pro Leu Leu Glu Ser Pro Pro Pro Pro Pro Leu Glu Ser Pro Ser
                85                  90                  95

cca ccg tct cct cac gtc tca gct cct tcc ggt tca ccg cca tta ccc  336
Pro Pro Ser Pro His Val Ser Ala Pro Ser Gly Ser Pro Pro Leu Pro
            100                 105                 110

ttc ctt ccc gcc aaa cct tct ccg ccg cct tct tca cct ccc tcc gag  384
Phe Leu Pro Ala Lys Pro Ser Pro Pro Pro Ser Ser Pro Pro Ser Glu
        115                 120                 125

aca gtt ccg ccg gga aat acg att tct cca cca cct cgt tca ctt ccc  432
Thr Val Pro Pro Gly Asn Thr Ile Ser Pro Pro Pro Arg Ser Leu Pro
    130                 135                 140

tcc gaa tca acc ccg ccg gtg aac aca gct tct cct cca ccg cca tct  480
Ser Glu Ser Thr Pro Pro Val Asn Thr Ala Ser Pro Pro Pro Pro Ser
145                 150                 155                 160

cct cct cgc cgc cgt agt ggc cct aag cct tcg ttt cct cct ccc atc  528
Pro Pro Arg Arg Arg Ser Gly Pro Lys Pro Ser Phe Pro Pro Pro Ile
                165                 170                 175

aat tct tct cca cca aat cct tct ccg aac act ccg tca ctc cca gaa  576
Asn Ser Ser Pro Pro Asn Pro Ser Pro Asn Thr Pro Ser Leu Pro Glu
            180                 185                 190

act tct cct cca cct aaa cca ccg ctc tca acg acg cca ttt ccc tcc  624
Thr Ser Pro Pro Pro Lys Pro Pro Leu Ser Thr Thr Pro Phe Pro Ser
        195                 200                 205
```

```
tca tcc act ccc ccg cct aag aag tcc cct gca gca gta act ctt cct   672
Ser Ser Thr Pro Pro Pro Lys Lys Ser Pro Ala Ala Val Thr Leu Pro
    210                 215                 220

ttc ttt ggg cca gcg ggc caa tta ccg gat ggg acc gta gca cct cct   720
Phe Phe Gly Pro Ala Gly Gln Leu Pro Asp Gly Thr Val Ala Pro Pro
225                 230                 235                 240

att ggg cct gtt ata gag ccc aag acg agt cca gcc gaa tca ata tct   768
Ile Gly Pro Val Ile Glu Pro Lys Thr Ser Pro Ala Glu Ser Ile Ser
                245                 250                 255

ccg gga acg cca cag cca ctg gtt ccg aag agt cta cct gta acg acg   816
Pro Gly Thr Pro Gln Pro Leu Val Pro Lys Ser Leu Pro Val Thr Thr
            260                 265                 270

tcg tat cac cga tca tcc gcc gga ttc tta ttt ggc ggt gta atc gtt   864
Ser Tyr His Arg Ser Ser Ala Gly Phe Leu Phe Gly Gly Val Ile Val
        275                 280                 285

gga gct ctt cta cta att ctg tta ggt ctt ctc ttt gtc ttc tac aga   912
Gly Ala Leu Leu Leu Ile Leu Leu Gly Leu Leu Phe Val Phe Tyr Arg
    290                 295                 300

gct acc aga aat aga aat aac aac agc agc tct gct cat cat caa tcc   960
Ala Thr Arg Asn Arg Asn Asn Asn Ser Ser Ser Ala His His Gln Ser
305                 310                 315                 320

aaa act ccc tca aaa gtt caa cat cat cgg ggc ggt aat gct ggt acg   1008
Lys Thr Pro Ser Lys Val Gln His His Arg Gly Gly Asn Ala Gly Thr
                325                 330                 335

aac cag gca cat gtt atc aca atg cca cca cca atc cat gct aaa tat   1056
Asn Gln Ala His Val Ile Thr Met Pro Pro Pro Ile His Ala Lys Tyr
            340                 345                 350

ata tct agt gga ggt tgt gat acg aag gag aac aat tct gtt gcg aaa   1104
Ile Ser Ser Gly Gly Cys Asp Thr Lys Glu Asn Asn Ser Val Ala Lys
        355                 360                 365

aac att tca atg cca tct gga atg ttc tcc tac gaa gaa ctt tca aaa   1152
Asn Ile Ser Met Pro Ser Gly Met Phe Ser Tyr Glu Glu Leu Ser Lys
    370                 375                 380

gca act ggt gga ttt tca gag gag aac ctt ttg gga gaa ggc ggt ttc   1200
Ala Thr Gly Gly Phe Ser Glu Glu Asn Leu Leu Gly Glu Gly Gly Phe
385                 390                 395                 400

gga tat gtt cac aaa gga gtg ttg aaa aac ggg aca gaa gtt gcg gtg   1248
Gly Tyr Val His Lys Gly Val Leu Lys Asn Gly Thr Glu Val Ala Val
                405                 410                 415

aag cag ctg aag att ggg agc tat caa ggg gaa aga gaa ttc caa gct   1296
Lys Gln Leu Lys Ile Gly Ser Tyr Gln Gly Glu Arg Glu Phe Gln Ala
```

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                420                 425                 430

gag gtt gac aca atc agt agg gtt cat cat aag cac ctc gtt tca ttg   1344
Glu Val Asp Thr Ile Ser Arg Val His His Lys His Leu Val Ser Leu
        435                 440                 445

gtt ggt tat tgc gtt aat gga gat aaa aga ctc ttg gtt tac gag ttt   1392
Val Gly Tyr Cys Val Asn Gly Asp Lys Arg Leu Leu Val Tyr Glu Phe
    450                 455                 460

gtt cct aaa gat acc ttg gag ttc cac ttg cat gag aac aga gga agc   1440
Val Pro Lys Asp Thr Leu Glu Phe His Leu His Glu Asn Arg Gly Ser
465                 470                 475                 480

gtg ttg gaa tgg gaa atg agg ctc agg att gct gta gga gca gca aaa   1488
Val Leu Glu Trp Glu Met Arg Leu Arg Ile Ala Val Gly Ala Ala Lys
                485                 490                 495

gga tta gct tat ctt cat gag gat tgc agt cca act ata att cac cgt   1536
Gly Leu Ala Tyr Leu His Glu Asp Cys Ser Pro Thr Ile Ile His Arg
            500                 505                 510

gat atc aaa gca gct aat atc ctt cta gat tcc aaa ttt gag gca aag   1584
Asp Ile Lys Ala Ala Asn Ile Leu Leu Asp Ser Lys Phe Glu Ala Lys
        515                 520                 525

gtc tct gac ttt gga cta gcc aag ttt ttc tca gac acc aat tca tca   1632
Val Ser Asp Phe Gly Leu Ala Lys Phe Phe Ser Asp Thr Asn Ser Ser
    530                 535                 540

ttc act cat atc tct act cga gtg gta gga act ttc gga tac atg gct   1680
Phe Thr His Ile Ser Thr Arg Val Val Gly Thr Phe Gly Tyr Met Ala
545                 550                 555                 560

cca gaa tac gcg tcc agt ggt aaa gta act gat aaa tca gat gta tat   1728
Pro Glu Tyr Ala Ser Ser Gly Lys Val Thr Asp Lys Ser Asp Val Tyr
                565                 570                 575

tcc ttt ggg gtc gtg ctt cta gaa ctc atc act gga cgt cca tca att   1776
Ser Phe Gly Val Val Leu Leu Glu Leu Ile Thr Gly Arg Pro Ser Ile
            580                 585                 590

ttc gcc aaa gat tct tcc aca aac cag agt tta gta gac tgg gcg agg   1824
Phe Ala Lys Asp Ser Ser Thr Asn Gln Ser Leu Val Asp Trp Ala Arg
        595                 600                 605

cca ttg ctt acg aaa gca atc tct gga gaa agt ttt gac ttt ctt gta   1872
Pro Leu Leu Thr Lys Ala Ile Ser Gly Glu Ser Phe Asp Phe Leu Val
    610                 615                 620

gac tca agg ttg gag aag aat tac gat aca act cag atg gca aac atg   1920
Asp Ser Arg Leu Glu Lys Asn Tyr Asp Thr Thr Gln Met Ala Asn Met
625                 630                 635                 640
```

```
gct gct tgt gct gct gct tgc ata cgc caa tca gct tgg ctt cgg cct   1968
Ala Ala Cys Ala Ala Ala Cys Ile Arg Gln Ser Ala Trp Leu Arg Pro
                645                 650                 655

aga atg agc cag gta gta cgt gct ctt gaa ggc gag gtg gcc ctg aga   2016
Arg Met Ser Gln Val Val Arg Ala Leu Glu Gly Glu Val Ala Leu Arg
            660                 665                 670

aag gtc gaa gag act ggg aat agc gtg acc tat agc tct tct gaa aac   2064
Lys Val Glu Glu Thr Gly Asn Ser Val Thr Tyr Ser Ser Ser Glu Asn
        675                 680                 685

ccg aat gac atc aca cca cgg tat gga aca aat aag agg aga ttc gac   2112
Pro Asn Asp Ile Thr Pro Arg Tyr Gly Thr Asn Lys Arg Arg Phe Asp
    690                 695                 700

aca ggt tca agc gat ggt tac act tca gaa tat gga gtt aac cct tct   2160
Thr Gly Ser Ser Asp Gly Tyr Thr Ser Glu Tyr Gly Val Asn Pro Ser
705                 710                 715                 720

cag tcg agc agt gaa cat caa cag gtg aat act tag                   2196
Gln Ser Ser Ser Glu His Gln Gln Val Asn Thr
                725                 730
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<210> 17
<211> 731
<212> PRT
<213> Arabidopsis thaliana

<400> 17

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Met Ser Leu Ser Pro Ser Ser Ser Pro Ala Pro Ala Thr Ser Pro Pro
  1               5                  10                  15
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            20                  25                  30
Pro Ala Pro Pro Leu Ser Pro Leu Pro Pro Pro Leu Ser Ser Pro Pro
        35                  40                  45
Pro Leu Pro Ser Pro Pro Pro Leu Ser Ala Pro Thr Ala Ser Pro Pro
    50                  55                  60
Pro Leu Pro Val Glu Ser Pro Pro Ser Pro Pro Ile Glu Ser Pro Pro
65                  70                  75                  80
Pro Pro Leu Leu Glu Ser Pro Pro Pro Pro Pro Leu Glu Ser Pro Ser
                85                  90                  95
Pro Pro Ser Pro His Val Ser Ala Pro Ser Gly Ser Pro Pro Leu Pro
            100                 105                 110
Phe Leu Pro Ala Lys Pro Ser Pro Pro Pro Ser Ser Pro Pro Ser Glu
        115                 120                 125
Thr Val Pro Pro Gly Asn Thr Ile Ser Pro Pro Pro Arg Ser Leu Pro
    130                 135                 140
Ser Glu Ser Thr Pro Pro Val Asn Thr Ala Ser Pro Pro Pro Pro Ser
145                 150                 155                 160
Pro Pro Arg Arg Arg Ser Gly Pro Lys Pro Ser Phe Pro Pro Pro Ile
                165                 170                 175
Asn Ser Ser Pro Pro Asn Pro Ser Pro Asn Thr Pro Ser Leu Pro Glu
```

```
                180                 185                 190
Thr Ser Pro Pro Pro Lys Pro Pro Leu Ser Thr Thr Pro Phe Pro Ser
        195                 200                 205
Ser Ser Thr Pro Pro Pro Lys Lys Ser Pro Ala Ala Val Thr Leu Pro
    210                 215                 220
Phe Phe Gly Pro Ala Gly Gln Leu Pro Asp Gly Thr Val Ala Pro Pro
225                 230                 235                 240
Ile Gly Pro Val Ile Glu Pro Lys Thr Ser Pro Ala Glu Ser Ile Ser
                245                 250                 255
Pro Gly Thr Pro Gln Pro Leu Val Pro Lys Ser Leu Pro Val Thr Thr
            260                 265                 270
Ser Tyr His Arg Ser Ser Ala Gly Phe Leu Phe Gly Gly Val Ile Val
        275                 280                 285
Gly Ala Leu Leu Leu Ile Leu Leu Gly Leu Leu Phe Val Phe Tyr Arg
    290                 295                 300
Ala Thr Arg Asn Arg Asn Asn Asn Ser Ser Ser Ala His His Gln Ser
305                 310                 315                 320
Lys Thr Pro Ser Lys Val Gln His His Arg Gly Gly Asn Ala Gly Thr
                325                 330                 335
Asn Gln Ala His Val Ile Thr Met Pro Pro Pro Ile His Ala Lys Tyr
            340                 345                 350
Ile Ser Ser Gly Gly Cys Asp Thr Lys Glu Asn Asn Ser Val Ala Lys
        355                 360                 365
Asn Ile Ser Met Pro Ser Gly Met Phe Ser Tyr Glu Glu Leu Ser Lys
    370                 375                 380
Ala Thr Gly Gly Phe Ser Glu Glu Asn Leu Leu Gly Glu Gly Gly Phe
385                 390                 395                 400
Gly Tyr Val His Lys Gly Val Leu Lys Asn Gly Thr Glu Val Ala Val
                405                 410                 415
Lys Gln Leu Lys Ile Gly Ser Tyr Gln Gly Glu Arg Glu Phe Gln Ala
            420                 425                 430
Glu Val Asp Thr Ile Ser Arg Val His His Lys His Leu Val Ser Leu
        435                 440                 445
Val Gly Tyr Cys Val Asn Gly Asp Lys Arg Leu Leu Val Tyr Glu Phe
    450                 455                 460
Val Pro Lys Asp Thr Leu Glu Phe His Leu His Glu Asn Arg Gly Ser
465                 470                 475                 480
Val Leu Glu Trp Glu Met Arg Leu Arg Ile Ala Val Gly Ala Ala Lys
                485                 490                 495
Gly Leu Ala Tyr Leu His Glu Asp Cys Ser Pro Thr Ile Ile His Arg
            500                 505                 510
Asp Ile Lys Ala Ala Asn Ile Leu Leu Asp Ser Lys Phe Glu Ala Lys
        515                 520                 525
Val Ser Asp Phe Gly Leu Ala Lys Phe Phe Ser Asp Thr Asn Ser Ser
    530                 535                 540
Phe Thr His Ile Ser Thr Arg Val Val Gly Thr Phe Gly Tyr Met Ala
545                 550                 555                 560
Pro Glu Tyr Ala Ser Ser Gly Lys Val Thr Asp Lys Ser Asp Val Tyr
                565                 570                 575
Ser Phe Gly Val Val Leu Leu Glu Leu Ile Thr Gly Arg Pro Ser Ile
            580                 585                 590
Phe Ala Lys Asp Ser Ser Thr Asn Gln Ser Leu Val Asp Trp Ala Arg
        595                 600                 605
Pro Leu Leu Thr Lys Ala Ile Ser Gly Glu Ser Phe Asp Phe Leu Val
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```
    610                 615                 620
Asp Ser Arg Leu Glu Lys Asn Tyr Asp Thr Thr Gln Met Ala Asn Met
625                 630                 635                 640
Ala Ala Cys Ala Ala Ala Cys Ile Arg Gln Ser Ala Trp Leu Arg Pro
                645                 650                 655
Arg Met Ser Gln Val Val Arg Ala Leu Glu Gly Glu Val Ala Leu Arg
            660                 665                 670
Lys Val Glu Glu Thr Gly Asn Ser Val Thr Tyr Ser Ser Ser Glu Asn
        675                 680                 685
Pro Asn Asp Ile Thr Pro Arg Tyr Gly Thr Asn Lys Arg Arg Phe Asp
    690                 695                 700
Thr Gly Ser Ser Asp Gly Tyr Thr Ser Glu Tyr Gly Val Asn Pro Ser
705                 710                 715                 720
Gln Ser Ser Ser Glu His Gln Gln Val Asn Thr
                725                 730
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<210> 18
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<220>
<221> misc_feature
<222> (1)..(27)
<223> N(1) =i N(2) =i N(3) =T/c/A N(4) =i N(5) =A/T N(6) =T/C N(7) =A/g

<400> 18
gnggtttcg gnatngtntt nnaangg 27

<210> 19
<211> 9
<212> PRT
<213> Brassica napus

<220>
<221> PEPTIDE
<222> (1)..(9)
<223> X(1) =F/Y

<400> 19
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<210> 20
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<220>
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<223> N(1) =i N(2) =i N(3) =T/g N(4) =i N(5) =i N(6) =A/g N(7) =A/g N(8) =T/c

<400> 20
aanatncnng ccatnccnaa nn 22

<210> 21
<211> 8
<212> PRT
<213> Brassica napus

<400> 21
Asp Phe Gly Met Ala Arg Ile Phe
1 5

<210> 22
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 22
taaccaacaa gagaca 16

<210> 23
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<220>
<221> misc_feature
<222> (1)..(23)
<223> N(1) =g/A N(2) =i N(3) =g/A N(4) =T/C N(5) =i N(6) =i N(7) =A/g N(8) =I N(9) =A/g N(10) =A/g

<400> 23
annannttng cnannccnaa ntc 23

<210> 24
<211> 8
<212> PRT
<213> Arabidopsis thaliana

<400> 24
Asp Phe Gly Leu Ala Lys Leu Leu
1 5

<210> 25
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 25
ccactcccaa ctttcaac 18

<210> 26
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 26
ggaaagcttg catgcctgca ggtcgac 27

<210> 27
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: primer

<400> 27
cgcctgcagg taatacgact cactataggg 30